

Read How Indianapolis Sheet Metal Works Gets Big Business—This Issue

American Artisan

and Hardware Record

Sheet Metal Work—Warm Air Heating

Vol. 94, No. 18

CHICAGO, OCTOBER 29, 1927

\$2.00 Per Year

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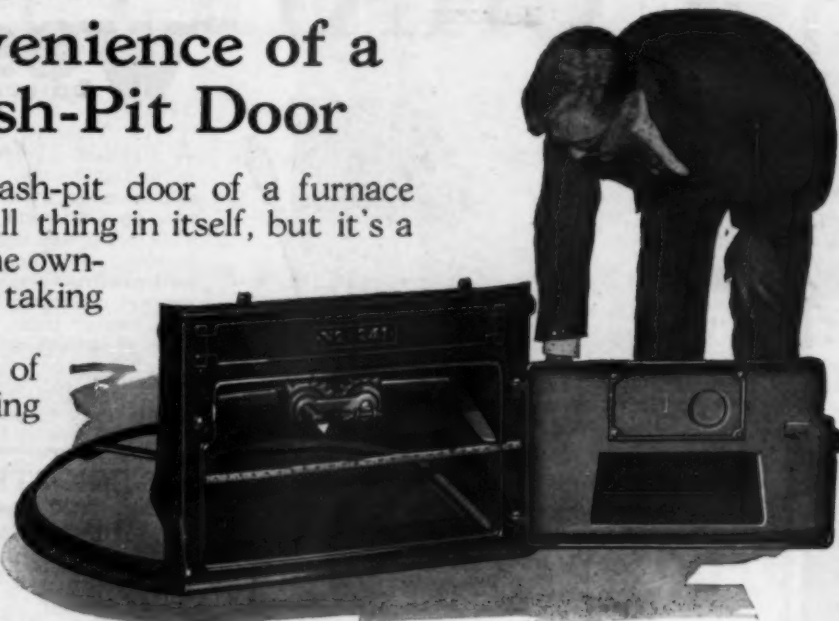
"Put Your Rule On The RYBOLT"

No. 2

The Convenience of a Large Ash-Pit Door

THE size of the ash-pit door of a furnace may seem a small thing in itself, but it's a BIG thing to the home owner when it comes to taking out the ashes!

The ash-pit door of the Rybolt is in keeping with the capacity of the ash-pit itself—high and wide—wide enough to admit a full man-sized shovel without crowding it.



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Size of Ashpit Door in the New RYBOLT Furnace

No.	181	201	221	241	261	281	301
In.	13x19	13x20	15x22	15x24	15x26	16x28	16x30

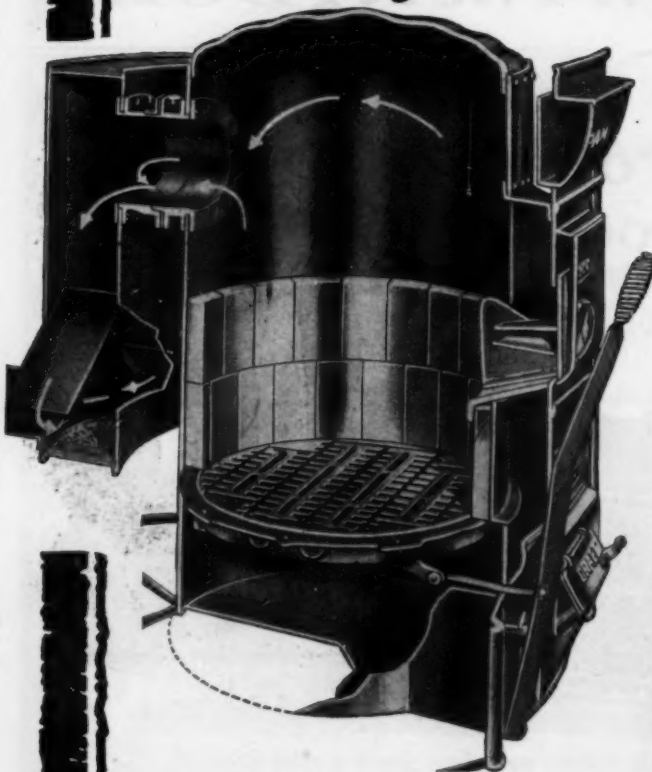
[An interesting folder telling the complete story of Rybolt size-superiority in pictorial form, will be sent free on request.]



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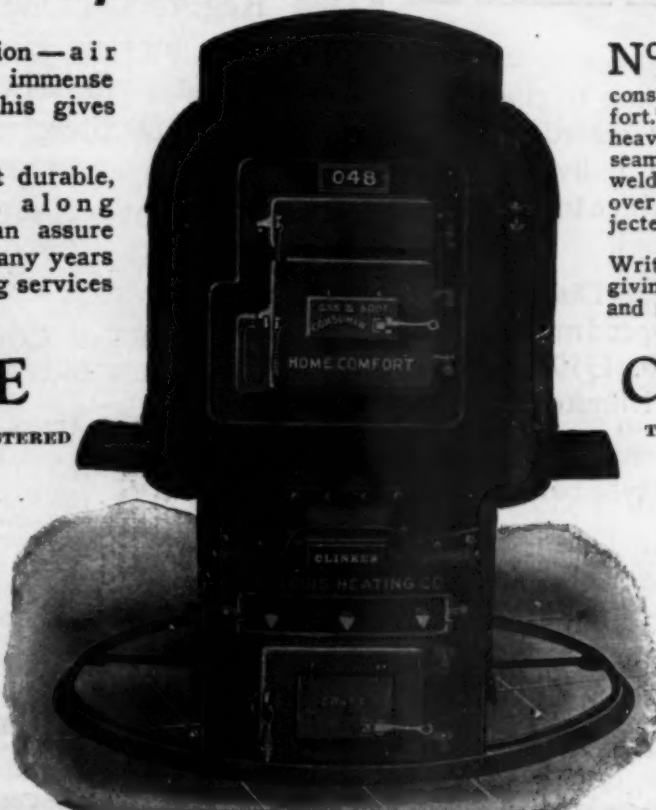
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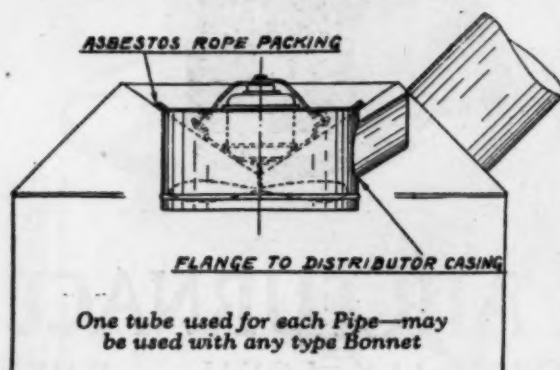
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CAST FURNACE

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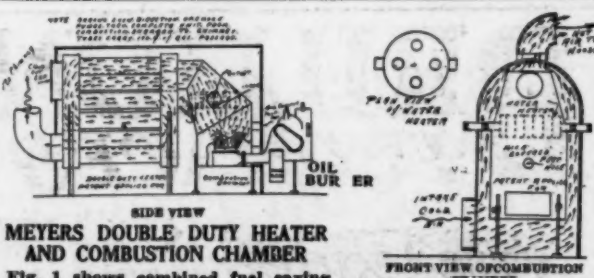


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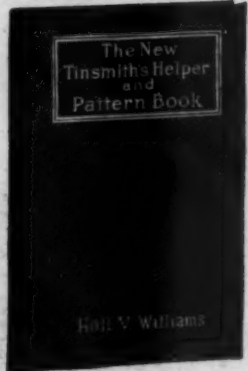
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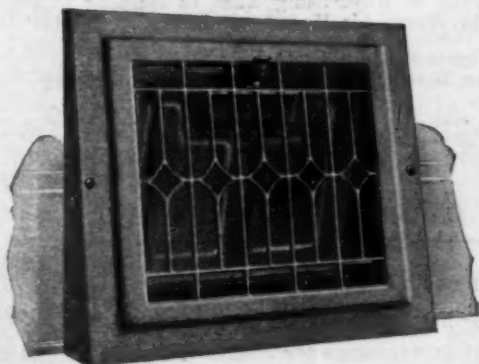
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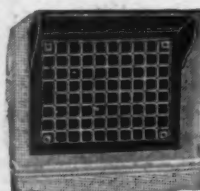
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fuel.

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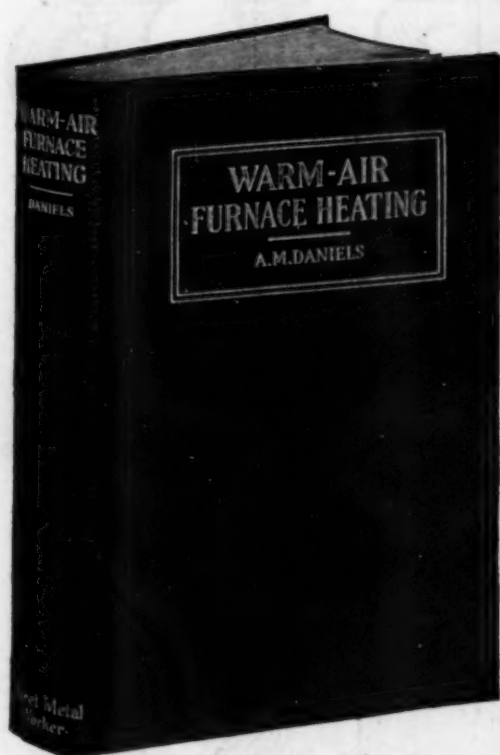
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Unsell Yourself That Business Is Bad

Elbert Hubbard used to tell the story of a naturalist who divided an aquarium with a glass partition, putting a bass in one end and minnows in the other. Every time a minnow approached the glass partition, the bass struck. But after three days of bruising his nose, he gave it up and merely took the food that was given to him. Though the naturalist removed the glass partition and the minnows swam around him, the bass paid no attention to them, because he had been sold on the idea that business was bad. Occasionally we hear of salesmen who need to try another strike. As a matter of fact, the partition has been removed for some time. There are orders on all sides for those who go after them.

A New Book on Warm Air Heating



Just off the Press—Now ready for you

IT IS the book that thousands have been asking for—a book on Warm Air Furnace Heating that is UP-TO-DATE—a book that covers every phase of the subject giving exact data based on research work.

Written by A. M. Daniels.

Here is the book that will enable both the experienced furnace man and the student to obtain a working knowledge of up-to-date scientific warm air furnace heating.

Read over the Chapter Headings—notice the complete treatment of the subject.

Many tables are included and some big labor savers in calculating pipe sizes—also many diagrams.

Chapter Headings

1. Historical.
2. Typical Gravity Pipe Warm-Air Heating Systems.
3. Types of Warm-Air Furnaces.
4. Details of Furnace Construction.
5. Heat Losses.
6. Effect of Register-Air Temperature, Leader Area and Size of Wall Stack Upon Heating Effect Produced.
7. Insulating Coverings and Their Effect Upon Leader and Wall Stack Operation.
8. Casing Diameter vs. Furnace Capacity.
9. Air Supply to Furnace.
10. Furnace Capacity and Rating.
11. Register Grilles vs. Plant Capacity.
12. Chimneys and Flues.
13. Humidity.
14. Evaporating Pans.
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World's
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Manufacturers of
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For over
Thirty-three
Years
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Favorite
Steel
Furnace

Torrid Zone dealers *know* that a furnace with such a record and a Company occupying such a high place will continue to produce quality furnaces, and that they in turn will benefit from its marketing advantages.

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It is not only distinctively designed but its construction is heavier and accurate in every detail.

It is so good that the manufacturers themselves guarantee it for 10 years.

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Marshalltown, Iowa Syracuse, New York

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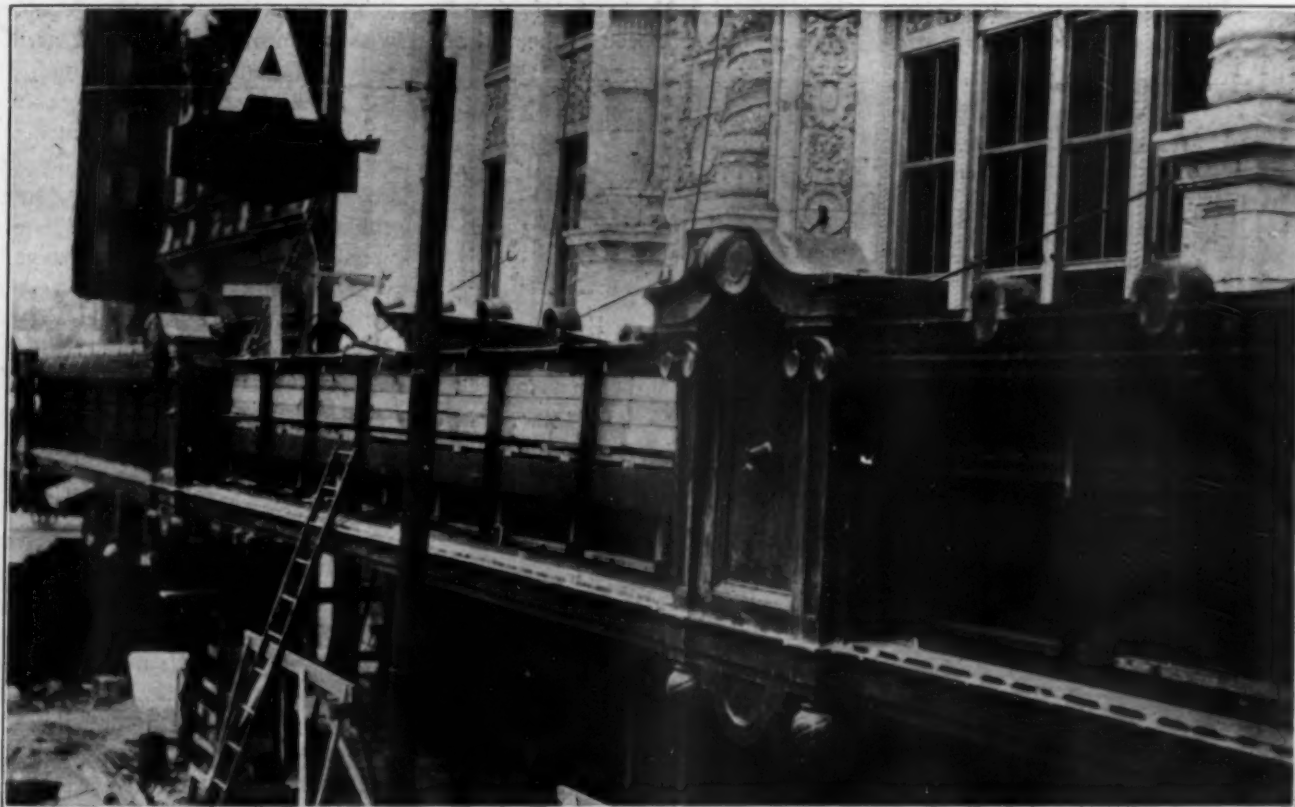
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CHICAGO, OCTOBER 29, 1927

No. 18



Copper Canopy, 125 Feet Long, Erected Over Entrance to New Indiana Theater, Indianapolis, by Smither Roofing & Sheet Metal Company. Note Hand Wrought Scroll Work

Metal Canopies Add to Attractiveness of Theatre and Retail Store

Systematic Operation of Business Makes Profit Possible to Smither Roofing & Sheet Metal Company

By GEORGE J. DUERR

THE DEMAND by the public for bigger and better movie palaces and the urgency expressed by retail merchandisers for more attractive store fronts has brought into existence a phase of construction with which the average sheet metal contractor is only slightly familiar. It is, nevertheless, one phase of activity in which the sheet metal contractor who is not afraid to tackle that type of work is getting a great deal of business that

would otherwise be lost to the sheet metal industry entirely.

In Indianapolis the Smither Roofing & Sheet Metal Company, 436 South Meridian Street, whose proprietor is Joseph E. Mattingly, past president of the Indiana Sheet Metal Contractors' Association, has recently completed a contract for the sheet metal work on the new Indiana theater, one of the largest and most up-to-date moving picture emporiums in the Hoosier capital.

The total contract amounting to \$11,000—sheet metal work, \$5,200; insulation, \$2,000; roofing, \$3,800.

The largest part of this contract was the construction and erection of the ornate copper canopy and display sign shown in the accompanying illustration. The beautiful designs and scroll work on this canopy were all hand wrought of 16-ounce copper in the shop of the Smither Roofing & Sheet Metal Company. There were 1,600 pounds of the

copper and 600 pounds of Armco iron used in connection with the canopy.

Some idea of the great length of this sign can readily be imagined when it is learned that only about three-fourths of it is visible in the illustration. The portion containing the large display sign, with innumerable electric lights, had

there were innumerable sheet metal fireproof boxes fitted with colored glass that contained the lights inserted in the balconies and also the exit lights.

Another considerable sheet metal job consisted in the construction of the fireproof operating room, which is equipped with fireproof doors, sliding open or closed at the will of

Company, in its aggressive business-getting way, made it its business to cultivate the architects responsible for the design of the building and convince them that these things could be done with sheet metal more easily than they could be done with other materials.

The company is in close contact with most of the important architects of Indianapolis at all times. It has in this manner won the confidence of the architects to such an extent that they invariably call upon the company for information and guidance on matters where sheet metal might possibly be involved, which is some compliment to the Smither Roofing & Sheet Metal Company when the general attitude of an architect toward a sheet metal contractor is considered.

From the foregoing it might appear that the Smither Roofing & Sheet Metal Company seeks only the large contracts. This is far from the truth, because it has learned that in order to make its activities show a substantial profit over the entire year, it must keep its men profitably employed at all times. It knows, too, that there are any number of smaller jobs to be had almost any time it is ready to send its men out after them, and these jobs it is continually lining up and bringing into the shop as fillers.

Store fronts and canopies over entrances, for instance, the company finds considerable profit in erecting; and there is little difficulty in convincing the store owner of the increased pulling power his windows will have if they are attractive and neat looking.

In the second accompanying illustration there is shown one of these jobs put up by the Smither Roofing & Sheet Metal Company for the Banner Furniture Company of Indianapolis. This store front canopy adds distinction and class to this store and gives it an aristocratic mien which it lacked before the erection of the canopy was made.

This entire canopy was made of copper. The corner posts, although they do not look it from the illustration, are almost seven feet in height and were designed and con-



Store Front Canopy Erected Over Entrance to Banner Furniture Company Store, Indianapolis, by Smither Roofing & Sheet Metal Company. Corner Posts Are Over Seven Feet High

not yet been put in place at the time the photograph was taken. A small portion of this central piece can be seen on the top of the canopy. When in position, it fitted snugly into the opening in the front of the canopy where the ladder is seen resting. The securing, fashioning and erection of this canopy was a man-sized job.

There was, however, a great deal of sheet metal work on this theater other than the construction and erection of the canopy. For instance,

the operator to permit the use of the various stage lights as these are needed.

The skylight over the stage, required by law and equipped with fusible link operating chains, is another job for the sheet metal contractor and of which the Smither Roofing & Sheet Metal Company took full advantage in this instance.

All such jobs as those done on the interior of the Indiana theater were made of sheet metal, because the Smither Roofing & Sheet Metal

structed in the shop of the Smither Roofing & Sheet Metal Company. Such jobs as these are obtained not by sitting around in the office and waiting for them to come in. They are procured by approaching the owner of the store and picturing to him the added attractiveness his store front will have by the addition of such an ornamental piece of work.

In the conduct of its affairs, too, the Smither Roofing & Sheet Metal Company has system. No job, large or small, goes through the office and upon which a bid was made, that is not filed in complete detail and referred to from time to time. Complete files of contracts that were completed are stored in the company vaults for years back for ready reference whenever occasion demands.

In this way the company insures itself against accepting work upon which it cannot make a profit and thus sidesteps a great deal of trouble that it would otherwise experience.

The same systematic methods that obtain in the business end of the business are also found in the conduct of the construction end of the business. Stock is arranged so as to make it as easily accessible as possible. Loading and unloading materials and finished products is accomplished with as little lost motion as is practicable.

The tools employed by the company are up-to-date. For instance, the company has an electric saw which cost considerable money, but which has been found by actual experience to cut the working time of certain jobs almost in half. In this way the saw pays for itself in a very short time and after that the company's profit is added to very materially. It also permits the company to cut costs on jobs in a way that was not possible before and thus brings within its range many jobs that it could not, prior to the acquisition of the saw, have been taken with the expectation of profit to the company. *Obsolete tools are discarded.*

Watching the little things, eliminating the small leaks in the business, is, to Mr. Mattingly's mind,

just as important as getting the big contracts, because after all the small leaks, if allowed to run long enough, can easily sink a great ship.

How to Find Gallon Capacity of Galvanized Tank with Round Ends

We have a problem from J. Albert Murphy, Flat River, Missouri, who wants to know the capacity in gallons of a certain tank whose dimensions are 40 inches long by 18 inches wide by 18 inches deep. The ends of the tank are rounded.

If this tank were entirely rectangular, Mr. Murphy, the problem would be merely a matter of finding its cubic inch content and dividing

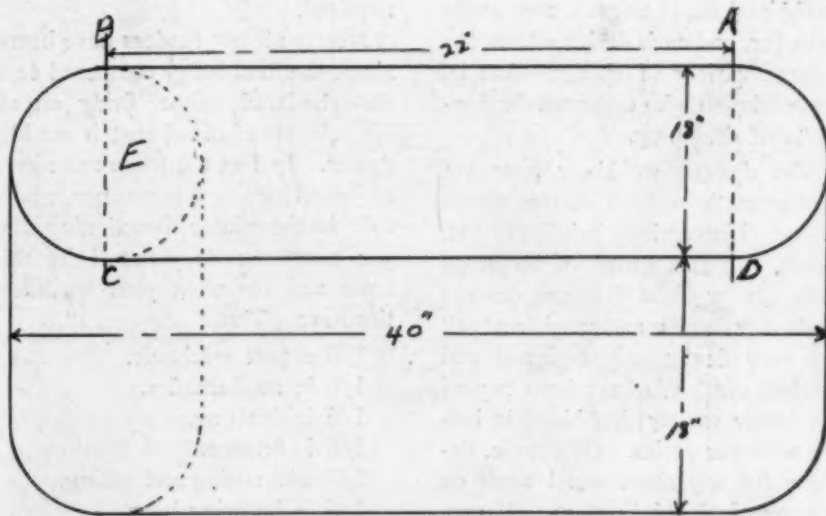
To find the area of a circle when the diameter is given the rule is, "multiply the square of the diameter by .7854." The square of the diameter in this case is 324, which when multiplied by .7854, following out the rule, equals 254.47.

Now to get the cube of the cylinder, multiply by 18, the depth, and get a cubical content for the cylinder of 4,580.46.

Dividing the cubic inches by 231, we find that the capacity of the cylinder is 19.82 gallons.

Adding 31.2 and 19.82, we have a total capacity of the tank of 51.02 gallons.

The cubic inch volume is 11,785.62.



Illustrating Method of Determining Capacity in Gallons of Tank 40x18x18 Inches, Requested by Albert J. Murphy, Flat River, Missouri

this figure by 231, which is the equivalent in cubic inches of one gallon, in this case 56.1 gallons.

In working out the problem in hand, however, let us make use of the rectangle described by A, B, C and D in the figure. The dimensions are 18x22x18 inches, which equals 7,128 cubic inches. So that that portion of the tank whose upper surface is described by A, B, C and D contains 7,128 cubic inches. Dividing this by 231, we find a capacity in gallons of 31.2.

In order to find the cubical contents of the two ends, it is necessary to determine the cubic contents of the cylinder E, since when the two ends are put together they will form a perfect circle 18 inches in diameter and 18 inches deep.

Hyro Manufacturing, New York, Moves to New and Larger Quarters

The Hyro Manufacturing Company, formerly located at 352-362 West 13th Street, New York, are now housed in their new and greatly enlarged quarters at 200 Varick Street, New York City, where they will continue to manufacture and sell the complete line of Hyro products. Some of the products this firm makes are the Universal hollow bench mandrel, No. 18 Duplex punch, No. O. X. metal punch, No. X. X. metal punch, Shur-grip file handles, Shur-grip soldering iron handles.

All correspondence should be directed to 200 Varick Street, New York City.

Describing One Method of Evolving Leader Head Designs of Various Kinds (Continued)

Workman Can Gain Valuable New Ideas from Which to Work

By O. W. KOTHE, Principal St. Louis Technical Institute

IN THIS series of leader head articles, illustrating the six designs, we believe the sheet metal worker as well as the employer should get a new stock of ideas to work from. Most men make a box-like affair and while it serves the purpose, it is, however, no credit of design or workmanship. The six designs of this series we believe to be as interesting and novel as most men could wish for, and each design allows for a large variety of change—that is, the workman who understands principles of designing.

The designs we show here are similar as those used on the Washington University buildings, St. Louis. In this group of buildings some six or eight different designs of leader heads are used, and all are very dexterously designed and worked out. We have here two of the better variety that blend in better with our series. Of course, designs for any sheet metal work on any classical buildings are all provided by the architect, and the tradesman must follow designs and specifications. This, of course, does not mean an employer or foreman should be ignorant of ideas that effect good designs. Quite often the architect leaves it to the sheet metal contractor to work out a design and submit it for approval. This is a practice more and more shops are beginning to make use of.

Take in the steam heating and plumbing trades, shops often do the piping designs on plans for architects, just to have a more favorable opportunity in securing the contract. The architect is ordinarily partial to such shops and allows them to charge a good price for their work as well as co-operates with them more closely. This practice saves the architect labor and time to work out designs and it only takes his

draftsman time to incorporate a more intelligent estimate and often write the specifications, so other shops must confine themselves to their dictation.

The reader will see that the further you can push your business into the middle of the stream of business activity, the larger are the opportunities; but also the more is required.

Nearly all our readers have heard about the man being compared to a six-cylindere motor, firing on all six. In sheet metal that is no idle dream. In fact the trade can nicely be subdivided in this manner, where 6/6 is the motor functioning 100 per cent. Grade yourself by this scale and see what your qualifications are. Thus:

- 1/6 expert mechanic.
- 1/6 in mathematics.
- 1/6 in drafting.
- 1/6 in finance.
- 1/6 advertising and selling.
- 1/6 in knowing how.

Right here I am sure that several thousands of my readers will recognize they are only 1/6 qualified, and that as a mechanic. They know little or nothing of mathematics or geometry. They are absolute babes in the woods when it comes to finance, and as mechanics they are not salesmen. Many a good man has his shop empty or is wearing off shoe leather. He is no salesman and does not know how to capitalize on the ability he does possess. He could learn—yes, but he won't.

For example, it is related, during the war times, a certain electric machine turning out supplies refused to work further, and the order had to go out. The chief engineer examined it, the president of the firm looked it over, but none could fix it. A delay of several days could not be allowed, so what was to be done?

A bystander, possibly a mechanic, said he knew a man up the street who could fix it. So he was sent for.

The man came—he did not look like he could fix anything—the president and chief engineer counceled him—but he just walked around the machine. It took him 10 minutes to get around, and when he was around one way, he took 15 minutes more to walk around the other way. The president wanted action, decision, but all this fellow did was to ask for a 10-pound sledge hammer. When it was brought, he hit the sprung parts twice, walked over and turned the switch—and away the machine run. The man went off unnoticed and sent his bill for \$500.

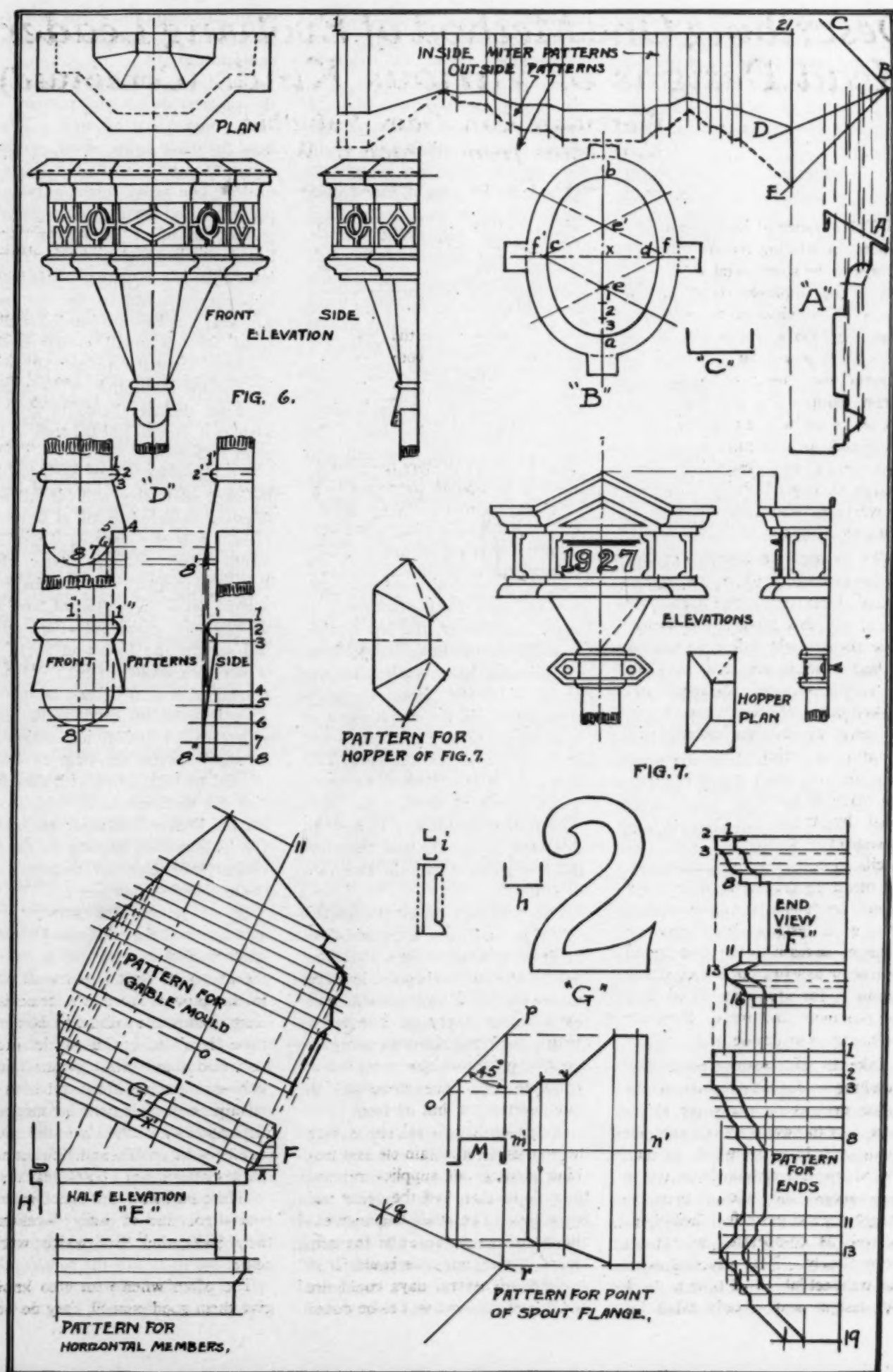
This angered the president and he called his staff together to determine what to do. Finally a clerk mentioned he would refer the bill back to him and ask for an itemized statement. When the statement was returned, it read:

For locating trouble and	
using hammer	\$ 20.00
For knowing how to strike	
machine	480.00
	<hr/>
	\$500.00

Please remit.

That nicely illustrates my point, and all through life it is a continual struggle of wits to find out the new ways "how" to get ahead in life. Thousands of shop owners are nothing more than 1/6 qualified and although they have been in business for many years, they are still mechanics with no other qualifications, that they have saved \$500, that they rush into business—got into a whirlpool—got sucked under—minus their \$500, and they go to work again.

Too often when men who know give them good council, they do not



believe it, but they go ask some other one-cylinder mechanic who does not know any more than they do and he advises them just like they wanted to do it. Of course, men of a similar qualification think alike.

This brings me back to our leader heads, as men who have developed their ability in mathematics and in design and pattern drafting—they can offer suggestions. Such men are more resourceful; they get ahead by using their head—not their hands and back. A design as at Fig. 6 is quite simple, easily made; but the big idea is first to work out the design. A man without geometrical training could copy it, yes, but could never do original work. That is where employers and foremen, as well as some journeymen, can serve the public in a larger way. The aim is to function on all six cylinders all the time.

To develop the patterns for this head we have two kinds of miters—the 90-degree and the 45-degree. We place the enlarged detail as at "A" and divide all curved lines in equal spaces. Then we place a 45-degree line as B-E to represent the miter line for a 90-degree angle. Next draw the angle A-B-C so B-C is on a 45-degree, and bisect the angle, obtaining the miter line B-D. Then by taking the girth from section "A," each point separately, it is set off as 1-21 and stretchout lines are drawn, after which lines are carried up from each point in section "A" to the miter lines D and E. Where these cross, carry over lines into pattern cutting off similar numbered lines, and this enables drawing the miter line of pattern through points shown.

With this pattern the several pieces required can be marked off, using the measurements from plan. The ornaments in the panel are very simple; the corners are merely posts planted in position much as detail "C" indicates. Possibly the oval ornaments will cause the most trouble, but if an ordinary oval is designed, that achieves the purpose. Thus at "B," where a-b is the major axis and c-d is the minor axis. By the rules of proportion we take the

minor axis c-d and subtract it from the major axis a-b as b-e. Then the remaining space we divide in three equal parts as 1-2-3.

After this we pick two of these spaces, as 2-a, and using x as center, we establish points e and e'. In this case the space 2-a happens to fall exactly on point e, but it does not always do so, and wherever it is located, these points 2-a, from x make the end centers. Now pick four of the spaces, or the distance e-e', and using x as center, mark the points f and f'. This locates the side centers, and by drawing the divisional lines we can describe the oval from centers e-e' and f-f'. After this the width of oval is added and a parallel arc is described. The lugs can be added in length and width as required. Small strips are soldered along the edges of oval as detail "C" shows.

The hopper portion of leader head can be developed much the same as our several previous examples and no further comment is needed. However, the lower ornament "D" is something different and for this we have detailed an enlarged side and front elevation. Here we divide the curved lines of front elevation in equal spaces and projections over the side view. This makes the lines in both views correspond. Now to develop the front pattern, observe the line 1'-2'-8' of side view is slanting and therefore this line is longer than the face view of front.

Hence we pick the girth from this side view and place it on line 1'-8' of front pattern. Draw stretchout lines, and from each point in elevation drop lines into stretchout to cross lines of similar number as 1''-8', etc. This allows tracing the outline of pattern for front. Now to get the side pattern, we pick the birth as 1-2-3-4 to 8 of front elevation and set below side elevation, as 1-8. Draw stretchout lines and from each point in side view drop lines to cross similar numbered lines in pattern. This allows tracing the outline of side pattern as 1''-8'' as shown. As no work is required of this ornament, not being subject-

ed to any strain, no edges need be allowed, as all edges can be butted and soldered.

Our design in Fig. 7 is based on the classical design and presents a very pretty piece of work. This head is made quite small, so all members must be small and sharply made. The front forms a raking pediment, and the panels are faced, giving the effect of corner face boards of buildings. In fact, the head itself is a miniature house with a hopper attached to the bottom. The year numbers are planted in the panel with a small crown mold stretched along the top as a sheltering for the inscription. The spout band we slightly altered to give a change of design, and the style at m gives a good effect.

Possibly their raking pediment is the most interesting, and for this we draw an enlarged detail as at "E." Here 1-1 is the pitch of the pediment, being designed after the Roman principle. At F we have a normal detail of the return, and as the pediment grows out of the normal section and forms an angle, it is therefore smaller in girth. Hence a modified section G must be made. This is done by drawing a line square to 1-1 and divide section F in equal spaces, carrying up lines parallel to 1-1. Then with dividers pick the distances as x, etc., from the set line and transfer as x' in G. This enables locating points of similar projection for sketching in the modified section G.

So to set out the pattern for gable, pick the girth from G, each space separately, and step it off on the line 0-11, so it is perpendicular to the gable 1-1. Draw stretchout lines so they are parallel to 1-1, and then from each point of detail F, and also the vertical center miter line—project lines into stretchout to cut off lines having similar number. This allows for working in the miter cut lines as shown and finishes the gable pattern.

The part below the ogee or horizontal member is easily developed, as shown below "E," which can be extended to include the panel at this point. In fact the patterns as developed for sides at "F" are suitable

and the notch can be easily worked in the front with the ogee removed. From the details at "F" we see the end view, as well as the narrow offset strip is also developed. In practice this strip can be marked direct from the end pattern since the cut is for a 90-degree turn, and the one edge is for an outside miter; the other is for an inside miter. The actual development is identical to all the square miter patterns we have considered thus far.

The hopper is also very plain and can be developed the same as described for previous hoppers. The small corner face pieces are made and formed as shown by details at 2', which are planted in position with solder. In the making of letters as at "G," some care must be taken to sketch in the curved parts so a good appearance is made. It is sometimes advisable to have an alphabet with numbers at hand, so certain shapes may be had to go by. These shapes are cut out on the line, and a narrow strip as at h, is soldered around the edges, which allows planting the numbers to the panel space.

Another simple pattern is of interest and that is the flange m, shown by detail M. Here the miter line c-p is a 45-degree angle, while q-r is the bisected miter for the 45-degree angle face miter. Both miters are off the face miter type, and by projecting lines and measuring off the girth as m'-n', the pattern can be easily developed.

Some tradesmen will feel this is a terrible lot of work to be put on a little thing like a leader head. That may be true, but such is art; we cannot have anything nice that does not take a lot of work. If we would have distinction—to stand out from all other people of our craft—we must put something into the work to be original. Men who try to pattern their lives after others who have never made a success, they will also fail to make a personal distinction.

The leader heads we have illustrated are a part of Architectural Cornice Work. In fact much of our work has been the same, only

applied to down spout ornamentation. In our future drawings we shall take up detailing of Cornices by Scientific methods and the reader who follows this closely will improve his understanding 100 per cent in many ways. There is something about Architectural work that satisfies a person's inner feeling more than any other line of Sheet Metal branch.

Men who have once become skilled in this highly artistic branch of the trade will never feel at home with what thousands today regard as the best fields, as Heating Ventilating duct work, or Blow piping, Metal trim, etc. I am sure the future will bring more and more cornice work again because economic pressure will have its effect. If galvanized iron and copper can be made to show up well as long as a building stands in this country, it will be used more and more, because it costs so much less than other ornamental materials.

Sheet Metal Trade Extension Issues Book on Sheet Steel Products and Makers

Mere words are inadequate implements with which to convey to the reader an accurate picture of the contents of a Directory entitled, "5,000 Sheet Steel Products and Who Make Them," that has been recently compiled and published by the Sheet Steel Trade Extension Committee, Oliver Building, Pittsburgh.

Prior to the appearance of this directory there had been no publication of any kind to which the sheet metal contractor could refer to find all of the manufacturers of sheet steel, all of the fabricators of products made from sheet steel and the names of these products.

Before the compilation of this information, guesses of the number of sheet steel products made in this country ran all the way from 500 to 2,500. When the copy was completed and the count made, officials of the Sheet Steel Trade Extension Committee found that they had listed 4,910, and between the time

the book went to the printer and the date of publication this number had grown to more than 5,000.

In spite of the enormous undertaking which the publication of such a directory entailed, the Sheet Steel Trade Extension Committee set out to do as thorough a job of it as they were humanly able to do, and how well they succeeded can be partially told when it is said that the book comprises some 445 pages, with a complete alphabetical index.

A perusal of the table of contents of this remarkable publication will give the reader some idea of the magnitude of the work represented and the information thus made available in this book. Here are some of the items that appear there: "Brief History of Iron and Steel," "U. S. Standard Weights and Gauges for Iron and Steel Sheets," "Alphabetical List of Fabricators," "Alphabetical List of Fabricators by States," "Five Thousand Sheet Steel Products and Who Make Them," "Sheet Steel Products with Index to Fabricators Who Make Them." The book is being offered at \$3 per copy by the Sheet Steel Trade Extension Committee, Oliver Building, Pittsburgh.

Bay City, Michigan, Sheet Metal Men Prepare for Fall Meetings

The Bay City, Michigan, Local Sheet Metal Contractors' Association held their first fall meeting at Adam Schepper's office Tuesday evening, October 13. Very near a 100 per cent attendance was present to discuss the plans for the coming meetings.

It was decided that more social sessions should be held this fall than in the past, as there was not enough business to bring before the house to warrant a monthly business meeting.

Adam Schepper extended an invitation to the boys to hold their next meeting at his cottage on the bay and enjoy a fish dinner. The invitation was readily accepted. After a discussion of the Standard Code the meeting was adjourned.

Harms Says Sheet Metal Locals Not Keeping Pledges to Order Trade Development Book

Finds Only a Few Locals Have Sent in Orders — All Should Make Reservations at Once

THERE appears to be considerable procrastinating being done in the matter of sheet metal contractors' local associations submitting their orders for the Trade Development book of the National Association of Sheet Metal Contractors of the United States.

George Harms, Chairman of the Trade Development Committee in charge of the compilation of this book, has sent the following appeal to all state and local sheet metal contractors' associations:

"Allow me to take you back to Dallas, Texas, when the National Association of Sheet Metal Contractors' convention was held last June. The report of the Trade Development Committee was accepted and everyone agreed to present the recommendations to their local and state association, with the idea in mind that orders for the book would be placed, and a certain amount of money advanced for the use of the committee.

"Shortly after the convention a letter was addressed to all local and state associations, enclosing order blank with request to order the books and pay about one-half the amount required at \$10.00 per book. Since then quite a large number of individuals have ordered one or more books, but so far only a few locals have sent in their order and money. Namely:

The Master Sheet Metal Contractors, 20 books, Tampa, Florida.

Birmingham, Alabama, Local, 20 books, Birmingham, Alabama.

Lancaster, Pennsylvania, Local, 8 books, Lancaster, Pennsylvania.

The Associated Sheet Metal Employers of Chicago, 100 books, Chicago, Illinois.

Alton, Illinois, Local, 5 books, Alton, Illinois.

Sheet Metal Contractors of Peoria, 26 books, Peoria, Illinois.

Sheet Metal Consumers of St. Louis, 10 books, St. Louis, Missouri.

R. L. Agassiz Re-Elected to Head Copper and Brass Research Association

William A. Willis Again Made Manager of the Association

AT THE seventh annual meeting of the Copper & Brass Research Association held October 20 at its offices, 25 Broadway, New York City, R. L. Agassiz, chairman of the Calumet & Hecla Consolidated Copper Company, was re-elected president.

The following were elected members of the Board of Directors, the first nine comprising the Executive Committee:

R. L. Agassiz, chairman, Calumet & Hecla Consolidated Copper Co.

Walter Douglas, president, Phelps Dodge Corporation.

C. F. Kelley, president, Anaconda Copper Mining Co.

Stephen Birch, president, Kennecott Copper Corporation.

Charles Hayden, vice-president, Nevada Consolidated Copper Co., Ray Consolidated Copper Co. and Utah Copper Company.

Joe A. Coe, president, The American Brass Company.

F. S. Chase, president, Chase Brass & Copper Co., Inc.

Edward H. Binns, president, C. G. Hussey & Company.

Barton Haselton, president and general manager, Rome Brass & Copper Co.

J. W. Allen, treasurer, Greene Cananea Copper Co. and Inspiration Consolidated Copper Co.

"Considering the large number of Locals affiliated with us, the result is not what has been anticipated. We must have your unqualified support to make a success of this venture. I therefore sincerely request that you give this matter your immediate attention.

"The work on the book is progressing very satisfactorily. Please forward orders and money to the Pittsburgh office, or write me personally."

Charles F. Ayer, president, Magma Copper Company.

Francis J. Bassett, sales manager, Taunton-New Bedford Copper Co.

Julian B. Beaty, vice-president, Nichols Copper Company.

H. C. Bellinger, vice-president, Chile Exploration Company.

J. C. Clendenin, director, Braden Copper Company.

Carl F. Dietz, president, Bridgeport Brass Company.

B. Goldsmith, president, The National Brass & Copper Co.

E. O. Goss, president, Scovill Manufacturing Co.

C. V. Jenkins, treasurer, Utah Copper Co., secretary-treasurer, Nevada Consolidated Copper Co., assistant treasurer, Ray Consolidated Copper Co.

William Loeb, vice-president, American Smelting & Refining Co.

H. B. Paull, auditor, Calumet & Arizona Mining Co., New Cornelia Copper Company.

Dr. R. M. Raymond, director, United Verde Extension Mining Co.

Sam A. Lewisohn, vice-president and treasurer, Miami Copper Co.

C. M. Loeb, president, American Metal Company, Ltd.

Charles W. Clark, president, United Verde Copper Co.

At a meeting of the Board of Directors the following officers were

elected: President, R. L. Agassiz; vice-presidents, C. F. Kelley, F. S. Chase, Walter Douglas, Barton Haselton; treasurer, Stephen Birch.

William A. Willis, who has managed the association since its formation, was re-elected to that position.

H. H. R. Spofford was re-elected secretary.

The following companies now comprise the membership of the association:

Copper Mining, Smelting and Refining Companies

The American Metal Company, Limited.

American Smelting & Refining Company.

Anaconda Copper Mining Company.

Arizona Commercial Mining Company.

Braden Copper Company.

Calumet & Arizona Mining Company.

Calumet & Hecla Consolidated Copper Company.

Chiie Exploration Company.

Green Cananea Copper Company.

Inspiration Consolidated Copper Company.

Isle Royale Copper Company.

Kennecott Copper Corporation.

Magma Copper Company.

Miami Copper Company.

Mother Lode Coalition Mines Company.

Nevada Consolidated Copper Company.

New Cornelia Copper Company.

Nichols Copper Company.

Old Dominion Company.

Phelps Dodge Corporation.

Ray Consolidated Copper Company.

Shattuck Denn Mining Corporation.

United Verde Copper Company.

United Verde Extension Mining Company.

Utah Copper Company.

White Pine Copper Company.

Copper and Brass Fabricating and Distributing Companies

The American Brass Company.

Bridgeport Brass Company.

Chase Brass & Copper Co., Inc.

T. E. Conklin Brass & Copper Company.

Dallas Brass & Copper Company.
C. G. Hussey & Company.
Mueller Company.

The National Brass & Copper Company.

New England Brass Company.

New Haven Copper Company.

New Jersey Wire Cloth Company.

The Paper & Textile Machinery Company.

The J. M. & L. A. Osborn Company.

Rome Brass & Copper Company.

Scovill Manufacturing Company.

Taunton-New Bedford Copper Company.

The Foster-Wheeler Company.

Wolverine Tube Company.

Best European Methods of Zinc Roofing to Be Discussed in New Zinc Workers' Handbook

S. C. Reynolds of the American Zinc Institute is now in Europe for the purpose of investigating the most approved European methods of zinc roofing.

On his return these modern European methods will be compared and fitted in with the 1927 American architectural methods and discussed in the Zinc Workers' Handbook, which will soon be published.

This will be a useful book for sheet metal artisans and architects, as it will contain the best methods and practice of using zinc in building.

W. A. Amelung Becomes Detroit Manager Chase Brass & Copper Company

W. A. Amelung, formerly with the U. T. Hungerford Brass & Copper Company, Cleveland, has been transferred from the Cleveland office of the Chase Brass & Copper Company to the managership of the Detroit office of that company. His headquarters will be located at 2798 East Grand Boulevard, where the Chase Brass & Copper Company will carry a complete warehouse stock.

Mr. Amelung is very well known in the Michigan territory, as he is in the Ohio territory. He is Sergeant-at-Arms for the Michigan Sheet Metal Auxiliary.

Carl Lenz will become the Cleveland branch manager for the Chase Brass & Copper Company.

W. E. Evans, formerly of Baltimore, has been placed in charge of the new warehouse which the Chase Brass & Copper Company opened recently at New Orleans, Louisiana.



National Warm Air Heating and Ventilating Association, Mid-year meeting, Urbana, Illinois, November 30 and December 1, 1927. Urbana-Lincoln Hotel headquarters. Allen W. Williams, 174 East Long Avenue, Columbus, Ohio, Secretary.

Western Warm Air Furnace & Supply Association, Sherman Hotel, Chicago, December 2nd and 3rd, 1927. Assistant Secretary, Onea B. Hussie, 3624 La Fayette Avenue, Omaha, Nebraska.

Kentucky Hardware & Implement Association, Seelbach Hotel, Louisville, Kentucky, January 17 to 20, 1927. Secretary-treasurer, J. M. Stone, 200 Republic Building, Louisville, Kentucky.

Michigan Sheet Metal & Roofing Contractors' Association, Kalamazoo, Michigan, March 5, 6, 7, 8, 1928. Secretary, Frank E. Ederle, 1121 Franklin Street, Grand Rapids, Michigan.

National Association of Sheet Metal Contractors of the United States, Hotel Statler, Cleveland, Ohio, May 22nd to 25th, 1928. Secretary, W. C. Markle, 336 Fourth Avenue, Pittsburgh, Pennsylvania.



Wicks for Alumino Oil Heater No. 3

From J. W. Strain, Sedalia Sheet Metal Works, 114 West Second Street, Sedalia, Missouri.

Where can I buy wicks for Alumino Oil Heater No. 3, made by the Novelty Manufacturing Company, Jackson, Michigan?

Ans.—United Stove Company, Ypsilanti, Michigan.

Imitation Coal of Ruby Glass for Fireplace

From Rock Island Stove Company, Rock Island, Illinois.

Kindly advise where we may obtain an imitation coal from ruby glass to be used in exhibiting fireplaces.

Ans.—Electric Fireplace Manufacturing Company, 400 North Union Avenue, Chicago, Illinois.

Random Notes and Sketches

By Sidney Arnold

"The essence of humor is sensibility; warm, tender fellow-feeling with all forms of existence."—Carlyle.

I had a very delightful visit with Tom Pearson, traveling representative of the Thomas & Armstrong Company, London, Ohio, on Wednesday of this week. Mr. Pearson came in for a chat while in Chicago. You know, in Tom's disguised moments (if there is such a thing) he prefers to style himself as Dr. Von Dinklespiel. He has often appeared before august delegations of warm air heating men in this guise. His last experience at Urbana, Illinois, almost proved disastrous for Tom, however, and I don't know whether he will again risk it. It all happened this way. You see, in order to get into the trappings of Dr. Von Dinklespiel, Tom, of course, had to change his clothes. It so happened that there were present at Urbana during the meeting several somewhat devilish fellows who thought it would be a good trick to steal Tom's street clothing while he was making his "address" before the warm air heating men. Fortunately for Tom, he got wind of the vile trick before it was perpetrated and hid his clothes in another room. In addition to his other many good qualities, Tom is quite a poet and the next time he comes into your place of business try him out on several.

* * *

Here's a definition for a slow burning building:

A slow burning building is one of "mill construction," where the enclosing walls and roof coverings are made of incombustible materials, with doors, windows and frames of wood, but with interior walls of brick or wood columns and girders, and the floor composed of heavy timbers and planks with no concealed air spaces between. The roof constructed with trusses or wooden beams of sufficient strength for the load carried, but in no case less than six inches by six inches in cross sections, spaced not less than

five feet nor more than ten feet on centers, with roof planking not less than one and three-quarters inches in thickness. With this type of construction it can be very readily seen that the chances for a fire to spread rapidly are reduced to a minimum.

* * *

October

Proud playwright of the sun and frost

Whose vacillating hour
Can cheer—then chill a leaf till lost
Is its resplendent dower
Of summer glory;
So runs a story
That makes in truth October be
The month of dual fantasy
With heat and cold,
Yet pays in gold

The foliage o'er dale and hill
For color pageants and the thrill
Of blazing trails when summer goes,
Although they lead to winter snows.

Great chronicler this playwright, too,
Upon a world wide page
Writing a hemisphere's review
With harvest heritage
From vine and sheaf
Beyond belief,

And though is spent the northern sun.

Their hour is full, their work well done,

With orchards mellow,
The corn field yellow,
And winging southward feathered flocks

Of birds which watch the equinox;
All scenic actors in the plays
October runs with changing days.

—Charles A. Heath in *Michigan Tradesman*.

* * *

That's Diplomacy

The traffic policeman had made a mistake. He had ordered a car to stop when there was really no reason for it. The driver, a middle-aged woman, was justly indignant. And she knew how to be indignant.

"Pardon me, madam," said the officer, "but I thought you were too young to drive."

* * *

A Drawing Account

"I should like to open an account at this bank, if you please."

"We shall be glad to accommodate you, madam. What amount do you wish to deposit?"

"Oh, I mean a charge account, such as I have at the big dry goods store."

* * *

Irish

Pat was hired in a lumber office. The proprietor was a young man with a sense of humor. He decided to have some fun with the new hand, so Pat was left in charge of the office, with instructions to take all orders which might come in. Going to a nearby store, the proprietor called up his office.

"Hello. Is this the East Side Lumber Co.?"

"Yis, sorr."

"Send me up 1,000 knot holes."

"Whot's thot?"

"One thousand knot holes."

"Well, now, an' ain't that a shame! We're just out of 'em. Sold to the brewery."

"The brewery? What do they want with them?"

"They use thim for bungholes in barrels."

* * *

It Seems We've Heard This One Before

An old black man who had spent many years in a wheel chair wanted to go on one last coon hunt before he died. So he and his grandchildren, accompanied by several dogs, started out.

Hardly had they gone into the swamps when they met a bear. All turned tail and fled, leaving granddad to his fate.

As they came panting into the yard, they called:

"Oh! Mammy! Mammy! Grandpap done got et up by a b'ar."

"Foolishment what yo' speaks, chillen. Yo' grandpap done come in ten minutes ago wid de dogs."

Sherwin Brothers, Milwaukee, Make Windows Attract Warm Air Furnace Prospects

Does Cooperative Advertising With Eight Other Milwaukee Weir Dealers

SCIENTIFIC merchandising has a great deal of work to do in the warm air heating field. There is perhaps no product contributing so largely to the health and comfort of the public as does the warm air heating system whose marketing receives so little consideration.

To verify that statement run through the gamut of products that are being retailed over the counter. What is done to move these goods? Are they allowed to depend entirely upon their merits to interest the customer? They most certainly are not.

They are first placed in the best possible setting. Then their good

points are picked out one by one and brought to the attention of the prospective purchaser.

For this purpose scientific advertisements are written. Counter arrangements are worked out. Floor displays are considered from every possible angle. Window displays are worked over for weeks and months to produce the proper effects.

Then after all this has been done, the retailers do not sit back and watch the money roll in, for the simple reason that they know this is not enough. After they have done everything they can to bring the people into the store, the next thing is

to convert the curiosity which brought them into the store into a buying mood. For this purpose the salesmen are trained just how to guide the customer's thought into the right channels.

How far have the furnace retailers got along this line? Some of them have not even completed the preliminaries, and yet they expect to sell furnaces. They are prone to wait until somebody comes into the store and asks the price of their furnace before they attempt to do anything about it. Assuredly the wrong attitude.

"But where shall we start?" says



Warm Air Heating Window Display Used Very Successfully by the Sherwin Brothers, 2719 Clybourn Avenue, Milwaukee, Wisconsin. Note How Backgrounds Are Designed to Center Attention Upon the Objects

Do You Know

THAT THE

WEIR STEEL FURNACE

HAS SERVED
DISCRIMINATING BUYERS
FOR ONE HALF CENTURY

?

ASK FOR THE WEIR BOOK OF FACTS
IT TELLS HOW AND WHY

See Your Nearest Weir Dealer

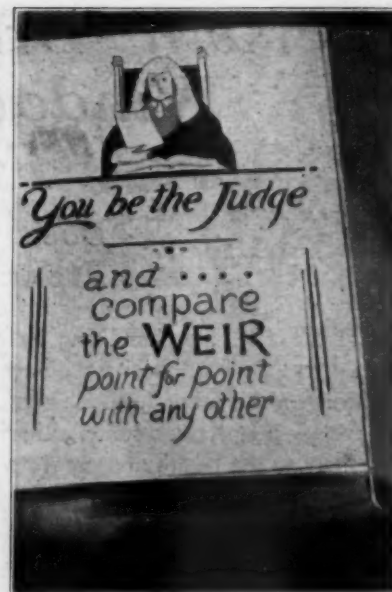
H. C. Erdmann 1211 24th Ave. Orchard 4862	Park Sheet Metal Furnace Co. 3720 Villet St. West 670
Eugene Gissinger Bluemound 2259 137 72nd St. Wauwatosa, Wis.	Wm. Pietsch Company 2442 Lisbon Ave. Kilbourn 6190
Kramer Sheet Metal Co. 146 Howell Ave. Hanover 420	Sherwin Brothers (Showrooms) 2719 Clybourn St. West 7865
Lindemann Furnace Co. 1105 11th St. Lincoln 5834	E. F. Weigend 322 Ogden Ave. Lakeside 1428

WEIR *all-steel* **furnace**
THE MEYER FURNACE CO., MFRS., PEORIA, ILL.

One of the Advertisements Which Appeared in the Milwaukee, Wisconsin, Sentinel as a Part of the Advertising Plan of Eight Weir Dealers

one furnace installer. One of the best "hopping off places" imaginable is the window display. Now, we might discuss window displays from here on and and never completely cover the subject, so we will

content ourselves with showing what one Milwaukee furnace installer has done in the way of advertising his furnaces and sheet metal products through the medium of his window display.



Clever Warm Air Furnace Advertisement Used by Sherwin Brothers

This installer is Jack Sherwin of Sherwin Brothers, 2719 Clybourn Avenue, Milwaukee, Wisconsin. A reproduction of one of the window displays employed by these progressive warm air furnace installers will be helpful to others who wish to emulate the progressive element in the warm air furnace installing game.

Let's look at this window in general first. It has the undeniable appearance of neatness, which in itself goes a long way toward creating a favorable impression. It looks inviting.

Then on the left we find the furnace pipe and register boxes all neatly placed before a background designed especially to center attention on the products shown. Notice the prominence given the National Warm Air Heating and Ventilating Association symbol, and also note how attention is called to the Standard Code installation. If ever a warm air furnace window display was designed to provoke the question, "What is the Standard Code?" this one surely is.

On the right side of the window note the manner in which the furnace itself is displayed. Furnace placed in the center of the window. Fire door opened and imitation fire placed into the fire box. Streamers running from the various parts of

Display in the Window of the Milwaukee, Wisconsin, Sentinel, Showing the Cooperation Which the Eight Weir Warm Air Furnace Dealers Received from that Paper

the furnace to small placards stuck to the window having bits of information placed so that the prospective purchaser can read them. Just enough information given about the furnace and installation to generate a good healthy interest in the mind of the prospective purchaser and send him into the store.

Perhaps to be entirely fair to all the other warm air furnace installers, I should mention the fact that Jack Sherwin's wife is an artist and her handiness with the paint and brush is finding good use in this rapidly growing warm air furnace installing business.

The window shown stimulated the interest in warm air heating on the part of the public very greatly and resulted in several actual sales.

The Sherwin Brothers have no shop in connection with this sales-room. Their workshop is located elsewhere.

In addition to keeping this show window right up to snuff at all times

the Sherwin Brothers also carry on a cooperative advertising campaign in the Milwaukee Sentinel with eight other Milwaukee Weir dealers. The advertisement they use is a 3-



Another Catchy Advertisement Which Is Bound to Get Attention

column 12-inch space. This shows what some of the more progressive warm air furnace installers throughout the country are doing to push warm air heating up to the plane where it belongs.

Philadelphia Warm Air Heating Chapter Begins Fall and Winter Study

The Philadelphia Warm-Air-Heating Chapter has taken up its work for the winter.

The two subjects were the Duo Therm Thermometer showing the effective temperature in the comfort zone, and Circular, No. 15, a booklet giving the tests at the Test House at Urbana, Illinois, during weather at 16 below zero.

The October meeting was held on Tuesday the 18th, when the subject of "What is a B. t. u." was taken up.

Each successive lesson will take, step by step, the heating of a house using the B. t. u. rule.

“Seek Standard Code for Warm Air Furnace Installation at Buffalo”

*Says Headline in Buffalo Courier-Express
in Architectural Section, October 9, 1927*

THE following quotation is taken from the Buffalo Courier-Journal of October 9, 1927, showing that the Buffalo warm air heating men are following their golden opportunity to get public sentiment with them on the adoption of the Standard Furnace Code in their city building ordinance.

“A movement has been launched to amend local building ordinances to make it compulsory that the national code for furnace installation be adopted for Buffalo. The association of warm air furnace installers and sheet metal contractors are working out the proposals.

“It is said that practically all of the furnace manufacturers and distributors of sheet metals are supporting the plan. It shortly will be presented to the council.

“What is probably the first attempt anywhere in the world to protect the home comfort of populations by legislative means was originated in the adoption of the Standard Code several years ago by the National Warm Air Heating and Ventilating Association, the American Society of Heating and Ventilating Engineers, the National Association of Sheet Metal Contractors, and other associations whose interests are allied with the problem of home heating.

“The Standard Code, which is the basis of practically all of the individual codes now being adopted, is an engineering formula designed to protect the home owner against the many home heating troubles that once were so common even in the better type homes. It is so simplified that it can be used and understood by any heating contractor and is based on engineering principles long known to be accurate.

Proves Its Value

“As a practical working rule the Standard Code has proven its value for several years past in almost

every community in the United States. By its use even an inexperienced furnace installer can figure the pipe sizes necessary to heat any room so accurately that he can give an unconditional guarantee to heat the room to 70 degrees regardless of outside weather conditions.

“This means that, by use of the Standard Code, the pipe sizes for any given room or house can be accurately determined for cold air ducts which carry the air back into the furnace and also for the warm air pipes which distribute the reconditioned air to all of the rooms. With accuracy in these figures it means that the balance between the cold air and the warm air is scientifically correct. Then, if the furnace supplying the warm air is large enough for the space to be heated, the system cannot fail to give uniformly efficient results.

Seek Ordinance Here

“When the system is thus installed there is a minimum amount of fuel required; there are no rooms that are difficult to heat; an even temperature of 70 can be maintained in every room with minimum work and effort.

“There are so many homes, however, in which these ideal conditions are so seldom obtained that it has attracted the attention of municipal boards of health and heating experts with the result that the Standard Code is fast being adopted as a national rule for the installation of heating systems. In such cities that already have passed a code ordinance, including Indianapolis, Minneapolis, St. Louis, Columbus, Omaha, Fort Wayne, Greensboro and Cincinnati, the building inspection makes it imperative that the system be installed according to the code. That safeguards the home owner against cheap and faulty heating installations or those put in by contractors whose experience makes

them unfit for the work. Many other cities now have it under consideration and still others, including Buffalo, are in the process of preliminary negotiations.

“The adoption by cities of the Standard Code is undoubtedly the first legal attempt to safeguard the American public against the many home heating troubles that came from heating systems improperly installed. Home builders are urged to specify and insist that it be followed in their furnace installations.”

Keith Furnace Company Explains Determining Furnace Heating Value

The Keith Furnace Company, Des Moines, Iowa, has recently issued its latest warm air furnace catalog, which is No. 16.

This 40-page booklet is a composite and comprehensive review of the Keith Furnace Company's warm air heating products, showing all of the latest developments that have been made.

A statement of the correct way to determine the heating value of a warm air furnace, which appears in the fore part of the catalog, should be of extreme interest to all warm air heating system installers.

The method employed to depict the products as they actually appear is very effective and will give the reader an excellent idea of the New Britain, Connecticut, has made made.

Two pages of the book are given over to forced air heating. One page contains a statement of the engineering policy of the company with respect to giving installers assistance and two pages are given over to the Standard Furnace Code, making the entire book an informative piece of warm air heating literature. A copy will be sent on request made to the Keith Furnace Company, Des Moines, Iowa.

Trapped Warm Air Demonstration at Central Michigan Exposition, Lansing

*William G. Waldron Gets Excellent List
of Prospects for Repairs and New Work*

ONE VERY excellent way of getting your products to the attention of the public is the demonstration. And one good place to stage the demonstration is at the state fair.

The accompanying illustration is that of William G. Waldron at the

of the registers, although the warm air pipes were trapped and the registers set about four feet below the collar on the hood.

"The weather was very cold and it rained every day, which in a way was good for us, as our booth was the most popular one on the grounds



Exhibit of William G. Waldron, Lansing, Michigan, at Central Michigan Exposition

Central Michigan Exposition, Lansing, Michigan, October 11 to 15. R. S. Thompson, sales representative of the Mt. Vernon Furnace Company, describes the display in the following words:

"I am mailing a picture taken the week of October 11th to the 15th at the Central Michigan Exposition held at Lansing, Michigan, where William G. Waldron, 1006 West St. Joe Street, had a Vernois furnace connected up with a Miles furnace fan on exhibition. A fire was going all the time, showing the prospects that warm air was forced out

and a real practical demonstration was given all day.

"The attendance was very poor, but the interest shown by those present proved that the public is more than interested in real heating and circulation in their homes than ever before, and Mr. Waldron will, no doubt, sell several good fan systems this fall, not only on new jobs, but on jobs that are in now and not giving satisfaction, and I think everyone that stopped had had trouble with his heating plant."

If you have had a booth, tell us about it.

**Hart & Cooley Register,
a Partisan Publication,
Makes Its Bow**

A very interesting little publication entitled the Hart & Cooley Register and published by the Hart & Cooley Manufacturing Company, New Britain, Connecticut, has made its appearance.

The purpose of this "partisan publication" is the "spreading of propaganda." The policy of the paper is summed up in the editorial quoted below:

"We present the first issue of *The Hart & Cooley Register*, a partisan publication, devoted to the spreading of propaganda.

"We want to draw your attention as painlessly as possible to the products of The Hart & Cooley Manufacturing Company, but we have no intention of confining our discussion to Hart & Cooley products.

"Confidentially (this mustn't go any farther) we have the idea that if we give you a lot of interesting information on warm air heating you will just naturally specify Hart & Cooley products when you buy. This is very subtle. Really, it is selling to your subconscious mind and the smooth part of it is that you do not realize you are being sold, so it is quite painless.

"Most publications of this kind start out with a fine issue, then sicken, grow worse, and die, so before we go any farther, we want to explain that this is not a house organ, and it will not be regularly published, but that every time we have anything we think will be of interest, we will take this method of expressing ourselves.

"We have in mind making this issue so poor, that the very hardship of poverty will strengthen its morale fibre and develop such sterling qualities of resistance and perseverance that it will follow in the traditional paths of greatness, using its obstacles as stepping stones, and thus achieve in its hour of triumph, the great cause to which its life is dedicated; namely, the securing of good and loyal customers for The Hart & Cooley Manufacturing Company."

Here's Type of Advertising That Is Helping to Build Warm Air Heating Industry

Story Quoted Below Appeared on Home Builders' Page, Chicago Daily News Recently

THE general public is learning about warm air heating from many different sources. Even the Architects' Small House Service Bureau of the United States, Inc., with national headquarters at 1200 Second Avenue South, Minneapolis, Minnesota, is doing its share toward telling the home folks about the warm air heating system.

In a recent issue of the Chicago *Daily News*, on the Architects' Saturday page, there appeared the following article over the copyright of the Architects' Small House Service Bureau of the United States, and adjacent to it incidentally appeared the accompanying advertisement of the Robinson Furnace Company.

Robert T. Jones, Technical Director of the Architects' Small House Service Bureau of the United States, Inc., has informed us that this article was printed in fifty metropolitan newspapers all over the United States, one of which was the Chicago *Daily News*.

"Comfort Lacking in Most Homes"

"Americans demand more comfort in their homes than any other people on the face of the earth. In spite of this fact, however, there are more homes that are unfit places in which to live from the health standpoint than those in which real comfort can be found, at least during winter months.

"As a matter of figures, there are only about 40 per cent of the homes in the United States that are heated by any central heating plant. The remainder depend upon stoves, fireplaces and a long list of other makeshifts. Limiting our consideration to the 40 per cent, the proportion in which real comfort exists is surprisingly low. Probably this is why home heating has become such a mystery to the average individual.

"To set him straight on the subject requires, first, some explanation as to what real home comfort is. Few people know because comparatively few people have it, in spite of the fact that comfort is a very tangible thing and a desirable commodity within the reach of all.

"Scientific workers in laboratories both here and abroad have set out to reduce comfort to terms of mathematics. It can be done. Nature does it every spring. Starting with the knowledge that comfort is composed of three factors—temperature, humidity and air motion—all that remains is to analyze the balance of these as they are found under ideal conditions.

Spring Day Ideal

"From the standpoint of personal pleasure, it is obvious that a day in early spring, usually the middle of May, appeals to most people as an ideal. At such times there come an exhilaration and sense of enjoyment merely from the fact of being outdoors. Municipal health records show that sickness reaches its lowest point at that time. It is highest during the winter months, when we live indoors. Therefore, if we duplicate the conditions found on a mild spring day in our homes every day during the heating season we shall have reached the ideal, both for pleasure and healthfulness.

"Unfortunately, in not one home in 500 do the three factors even approach the balance of nature. That is why the home in which real comfort exists is, indeed, a most exceptional one.

"Usually temperature is the only one of the three factors given much serious consideration. As a matter of fact, it is the least important because it is the easiest to acquire. Any heating device, if it is large enough, will produce all of the heat that any one should have. But it

is perfectly possible and, in fact, very usual, to have high temperatures with distinct discomfort.

"Heat your home to 80 degrees, drop the relative humidity to about 15 degrees and keep the air still and it will be both an unfit and very unpleasant place in which to live. Then drop the temperature to 68 degrees, increase the humidity to about 45 degrees and keep the air in motion and you will find springtime in your home every day that such conditions are maintained.

"Investigations of the living conditions in larger centers of population show that the relative humidity of the average apartment is between 12 degrees and 18 degrees. This is the humidity condition that is found on the great deserts of the world. The Sahara averages about 12 degrees. Is it any wonder, then, that disease curves mount by leaps and bounds as soon as the tired business man begins to stoke his boiler in the fall?

"Watch your hygrometer, which, by the way, is as necessary a part of home furnishing as is a thermometer. When the relative humidity gets below 40 per cent blow some live steam into the rooms or set the humidifier at a higher point. If you have a warm air furnace that is not equipped with an automatic humidifier, watch the water pan carefully, keeping it full all of the time. This is most easily done by having your plumber run a water line with a faucet over the pan so that all that is necessary is to turn the faucet when the water gets low.

Air Motion Needed

"To provide air motion, electric fans operated during the winter months will produce good results. With a warm air system the air is always in motion, flowing from the furnace to the rooms and back again to the furnace.

"The man with a home to heat today need blame only himself if his home is uncomfortable at any time. When he puts in the heating system, no matter what sort it is, he must resist the temptation of cheap prices. Good heating systems cost money just as do good things of any sort. Cheap ones give cheap results. Buy a good heater made by a reputable manufacturer. Have it installed by an expert. In the case of warm air, insist that it be installed according to the Standard Code. Provide for humidity and air motion as well as temperature, and the problem is solved. With care on these points it can be spring every day in your home."

(Copyright, 1927, the Architects' Small House Service Bureau of the United States, Inc., Home Builders' Clinic.)

Advertise, "Cold Days Ahead If Owner Neglects Warm Air Furnace"

Warm air furnace installers who are now casting about for ideas for catching attention and directing the public interest toward the warm air heating plant will find advertisements and circular letters coached somewhat as follows to bring good results:

"The present time may seem rather remote from the holiday season in its popular conception of snow-covered countryside and crowded streets before frosted shop windows filled with toys and good things to eat. Nevertheless, we are adjured to join Christmas clubs and organizations designed to relieve the needs of the poor, so that it might be well to consider one factor which always has much to do with holiday cheer on our own part.

"This is the heating plant. People rarely consider at this time of the year just what part of the heating plant contributes to the general atmosphere of well-being called good cheer, but it is, nevertheless, true that the holidays lose much of their meaning if the home is not kept at the right temperature for real enjoyment without constant worry about the heating plant.

"This is the time to have your warm air plant serviced, if any at-



New ROBINSON HEATING SYSTEM

No unsightly pipes.
Plenty of headroom.
Clean basement.

Instant heat—positive circulation.

Warm, moist air throughout the house.

Burns oil, gas or coal economically.

Keeps house at 70° in zero weather.

There are four Robinson Furnaces to every block in Chicago. Our heating systems are installed by expert crews and every job is laid out by a capable heating engineer.

No waiting for heat—the New Robinson Fan Heating System *actually blows* warm, moist air to every corner of the house in a few seconds. Early in the morning, all day long and at night, this wonderful heating plant will keep you warm and cosy, regardless of outside temperatures.

70 degrees in zero weather

Instant, constant heat may now be yours all winter—70 degrees in zero weather—healthy, comfortable heat for the whole family and warm floors for the children to play on.

More heat from less fuel

Amazing fuel savings are assured with this new trunk-line, blower system because it absorbs *four times the usual amount of heat*. That means more heat from less fuel—less firing—less bother.

World's finest home heating system

The New Robinson Heating System is unquestionably the finest home heating plant ever offered the public, and the most economical. Originated and designed by practical furnace men—engineers who have spent their lives solving heating problems.

Remodel your old heating plant

You don't have to tear out your old heating plant to take advantage of these improvements. Your present system can be remodeled and you can pay for it on our convenient partial payment plan.

See this remarkable heating system on display in our downtown showroom. Phone or send the coupon for one of our expert heating engineers to call and inspect your heating plant, free of charge.

FREE! INSPECTION SERVICE

ROBINSON FURNACE CO.
205-7 West Lake Street Chicago, Ill.

Please have one of your furnace engineers inspect our heating system free of charge.

Name _____

Address _____

Mail the
Coupon
before cold
weather
sets in

ROBINSON FURNACE COMPANY

205-7 West Lake St. at Wells St., Chicago

Phone: Franklin 4400

tention is required, or to have one of the many labor saving accessories installed. The numerous new types of plant for convenient oil, gas or coal heating are now sold at reasonable prices and on easy terms and may prove worthy of investigation as an aid to good cheer on

the holidays and many other days of the year.

"Recent strides in the development of heating plants and accessories have accomplished virtual miracles in the elimination of the old drudgery in furnace care and house heating."

Chilly Nights at Tenn. State Fair Make W. A. Furnace Display Popular Place

***Display Staged by C. H. Reese,
Nashville, Tenn., Installer***

STATE fairs have always been popular among the warm air furnace installers, and warm air furnace installers have found this a very potential means of securing good live leads.

Among the latest of these dis-

This fair was kept open evenings and most of the city people attended at that time, so that the warmth of the furnaces was particularly welcomed in the chilly night air.

G. E. Reese had charge of the display and was assisted by the in-



Booth of G. E. Reese Staged at Tennessee State Fair, Nashville

plays to come to our attention is that of C. H. Reese, 3109 Church Street, Nashville, Tennessee, where the state fair was held recently.

Just about the time the display was made they had a somewhat cool spell of weather in Nashville, and as there was an oil burner installed in one of the furnaces and kept in operation most of the time, the booth turned out to be a popular place.

ternational representative, S. M. Rankin. Mr. Reese reports a good number of prospects and some sales names as a result of this sales exhibit. No time was lost in following the names received, as the prospects received each day were turned over to C. H. Reese,

Perhaps you might care to put an item in the paper regarding this as an illustration of the value of this kind of advertising.

Canton Furnace & Mfg. Co. Develops New and Unique Furnace Fan

The Canton furnace fan, being brought out by the Canton Furnace & Manufacturing Company, Canton, Ohio, is the latest furnace fan to make its appearance in the realm of home heating.

This new appliance was invented by Leo O'Conner, Secretary of the above company.

It is a positive cure for a sick or



The New Fan

lazy furnace, giving four changes of air per hour in every room of the home, a vital factor to health.

The fan is shipped completely assembled in a section of cold air pipe and all that is necessary for its installation is to remove a piece of cold air pipe and insert this completely assembled unit with a draw bend.

The complete unit is made in various sizes to fit in cold air pipes of any make of furnace. Various lengths of extension cord are supplied to reach any electrical socket.

When not in operation, the fan folds up like the petals of a flower, giving full free air capacity in the pipe for the circulation of air by gravity.

The instant the current is turned on, the blades open up by centrifugal force, acting as any other electric fan.

It is said to increase heating capacity of either a new or old furnace.

The fan is equipped with an especially built motor which can be connected to an ordinary light socket. The shaft of the motor operates on ball bearings which are packed in oil-soaked wool and require lubrication but once a year. With the exception of turning on the electric current, the Canton fan is automatic in operation, although it can be connected with an automatic thermostat which renders it entirely automatic.

Armco Pays Tribute to Labor Chiefs During Recent Convention of Latter

When the Ohio State Federation of Labor met at Middletown recently for its annual convention, the American Rolling Mill Company, of that city, halted its routine long enough to make a graceful gesture of welcome to the labor chiefs. This took the form of a full page advertisement in the daily newspapers of Middletown. Headed, "The Higher Nobility," the advertisement began:

"Time was when nobility meant knighthood, gallantry, luxurious ease for the few. Slave toiled. Servant served. Worker produced. All served nobility, and nobility, in turn, served its own ends, often selfish and mercenary."

The advertisement traced the progress of man and described the twentieth century in these words:

"So modern, high grade, efficient labor, a co-ordination of head, hands and heart, and modern industry splendidly equipped and efficient beyond belief, turn the pages of life together. Each page finds a revelation, each chapter a new adventure, each book a recording of progress attained—human welfare and civilization advanced."

W. E. McFee, of the publicity department of the company, explained that the advertisement stimulated much favorable comment in labor and industrial circles.

"Despite the fact that organized labor held a short and busy conven-

tion," he said, "we know from remarks dropped by delegates that our message was appreciated."

Selling Becomes Most Important Item When Business Slows Down

In a period when productive capacity is admitted to be in excess of demand, the importance of salesmanship in the distribution of your merchandise and the importance of "selling" your firm and its service to the public and gaining its attention becomes increasingly obvious.

Every factor of your business operation is important but clearly your merchandise must be sold before a profit is registered, and to insure that there shall be no "cessation" in our sales, there must necessarily be no "cessation" in our education and

direction of the buying public.

"We sell to a public," says St. Elmo Lewis, "and that public is a peculiar thing. It is busy, indifferent and exacting. We know less about it than we should but we do know, however, that:

"1. It is a fallacy that the public will automatically seek the best. It has to be educated and directed.

"2. It is a fallacy that the public knows the difference between price and value.

"3. It is a fallacy that 'the public knows what it wants.'

"4. It is a fallacy that the public will demand over any great length of time what it is not reminded of."

Our duty as merchants is apparently continually to remind the consumer of the service and the merchandise we offer.

"The Higher Nobility"

TIME was when nobility meant knighthood, gallantry, luxurious ease for the few. Slave toiled. Servant served. Worker produced. All served nobility, and nobility in turn, served its own ends, often selfish and mercenary.

Meanwhile the world sped on its way, and with it inexorable Time flew apace. Civilization crept, as has ever been its wont—the race between the tortoise and the hare. But the hare tarried not, neither was the tortoise a laggard.

Time, the hare, brought with it nothing but rapid sequence of days and nights. In the wake of Civilization, the tortoise, however, came a new conception, a new nobility. Modern Labor, it was called; and the fruits of its heavily laden branches proved a boon to mankind.

Where, in medieval times, man labored and received naught but the bare necessities of life for his industry, the dawn of the 20th Century Civilization saw

his long deferred hopes revive, become a thing of reality, and return to him a hundred fold increased. Thus did Divine Providence reward patience and vision.

So, modern, high grade, and efficient Labor, a coordination of head, hands, and heart, and Modern Industry, splendidly equipped and efficient beyond belief, turn the pages of Life together. Each page finds a revelation, each chapter a new adventure, each book a recording of progress attained—human welfare and civilization advanced.

If this much has been accomplished within the span of a single century, what shall another unfold?

Continued and more widespread prosperity? Yes. Happiness? Yes. World Peace? Yes. Yet, these are but off-shoots of that Higher Nobility for which we should all strive.

And, after all, what is this Higher Nobility but the "Justice of Man Toward Man?"



The American Rolling Mill Company

Executive Offices, Middletown, Ohio

Plants at Middletown, Ashland, Zanesville, and Columbus

A Graceful Acknowledgment of the Role Labor Has Played in the Development of American Industry

Small Buying for Current Requirements Characterizes Steel Market

Demand for Pig Is Low—Nonferrous Metal Prices Point Downward

SCATTERED improvement is discernible in the iron and steel markets, but the instances appear unrelated and the general level of demand has not changed noticeably in the past week. Small lot buying for current requirements continues the rule, with the price tendency, especially in the lighter steel lines, still downward.

Activity in structural steel has subsided following one of the best weeks in that market's history.

Practically one-third of the final quarter is now past, with neither bookings nor production appreciably higher than the average of the third quarter and many prices lower. None of the four major outlets for steel—railroads, automotives, structurals and the oil, gas and water classification—gives promise of immediate tonnage. Operating handicaps, such as frequent roll changing, which are the sequel to restrained buying are stepping-up the labor cost per ton.

Pig Iron

At Pittsburgh merchant pig iron producers, steel companies and middle interests alike all claim the only activity in the pig iron market is confined to single carloads. Several say they never saw it more quiet since before the war, claiming it is impossible to stir up interest among consumers.

Many foundries and other consuming lines are operating only three days a week. An occasional sale of bessemer iron is noted at \$18, valley, and from time to time users inquire for basic. Inquiries for basic later disappear, the assumption being that tonnages are quietly closed with affiliated steel interests.

A sanitary ware manufacturer cleaned up a tonnage of foundry iron at the Clinton furnace which was liquidating its stock, taking

about 600 tons on a basis of \$17, valley. Producers are receiving only one or two inquiries per week for malleable.

One sale of low phosphorous copper free iron is noted, involving 100 tons at \$25, eastern furnace. Copper bearing is selling down to \$23, eastern furnace. A valley producer still quotes \$27.50, valley.

At Chicago fair inquiry is developing for northern iron to be shipped for first quarter next year, and a few large tonnages have been placed. Furnaces are not aggressive in pushing sales for early 1928 delivery. Spot buying is light. A number of carload lots have been taken, and a local melter closed on 150 tons of foundry at the base price of \$18.50, Chicago furnace.

The \$18.50 base price is steady, but has not stimulated sales to any extent. October shipments of pig iron from furnace are expected to exceed by several thousand tons the September volume.

The pig iron melt at Birmingham shows no improvement and no consumer is buying beyond immediate needs. Price still is firm at \$17.25, base, Birmingham.

October shipments are less than the output and some furnace interests are operating on slow schedule. Little iron has been sold into the next 60 days, and practically nothing for the latter part of the year.

Copper

A little copper business was done at 13.25 cents, Connecticut, but as the end of the month drew nearer some sellers began to shade prices. A little metal was offered for prompt shipment at 13.12½ cents, Connecticut, for prompt shipment, while in some instances it was difficult to tell what price might be done by one producer in case a real test developed. Other sellers held firm at 13.25 cents.

Tin

Tin prices backed and filled without much net change, but with perhaps a little more emphasis on the side of firmness. Buying was spotty, being good on some days by consumers, but on the whole not large, though more active than in some other weeks.

Business was well scattered from October to February. Some of the spot and nearby buying was by dealers who had gone short, and this covering caused spot to go to slightly more of a premium over later months. The trade expects small shipments this month from the Straits and a good decrease in the world visible supply.

Zinc

Prime western zinc sold down to 5.95 cents, East St. Louis, the lowest price since the middle of 1924. Business was light, except for one good day about a week ago.

Lead

The lead market is a little easy, but showing resistance to weakness abroad. Buying has been fair of late and for early shipment, but buyers get scared when the foreign market slips.

Solder

Chicago warehouse prices on solder are as follows: Warranted 50-50, \$36.75; Commercial 45-55, \$33.75; plumbers', \$30.75; all per 100 pounds.

Old Metals

Wholesale quotations in the Chicago district, which should be considered as nominal, are as follows: Old steel axles, \$16.75 to \$17.25; old iron axles, \$19.50 to \$20.00; steel springs, \$14.00 to \$14.50; No. 1 wrought iron, \$10.50 to \$11.00; No. 1 cast, \$12.50 to \$13.00, all per net tons. Prices for non-ferrous metals are quoted as follows, per pound: Light copper, 9 cents; zinc, 3½ cents; cast aluminum, 13¾ cents.

"OSBORN'S LEAD COTE" or Terne Flashing



We can furnish "shingle tins" or flashing,
plain or painted, made from
"OSBORN'S LEAD COTE" or any of
our regular brands of Terne Roofing.
Regularly carried in 5x7 in. size, 8 lb. quality,
painted both sides.
Packed 100 in a bundle.

THE J. M. & L. A.
OSBORN & CO.
CLEVELAND

If

it's made of Sheet
Metal or it's used
in working Sheet
Metal and

You

don't know where
to get it—

Write to the Notes and
Queries Dept. of
AMERICAN ARTISAN

Round
Corrugated



Plain Round



NEVER MADE WITHOUT THIS

TRADE *F. Dieckmann* MARK

Quality and Service Made 'em Famous

Made of one piece of heavy gauge material,
in all styles and angles from 10 to 90
degrees, of 24, 26, 28 ga. ternes, then
galvanized after formation.

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Elbows and Shoes
*are the standard of the market
and always give satisfaction*

Send for new catalogue 26 showing complete line

The Ferdinand Dieckmann Co.

P. O. Station B, Cincinnati, O.

Square
Corrugated
Style A



Square
Corrugated
Style B



Not made lighter than
28 ga. or 16 oz. copper

Chicago Warehouse Metal and Furnace Supply Prices

AMERICAN ARTISAN AND HARDWARE RECORD is the only publication containing Western Hardware and Metal prices corrected weekly.

METALS

PIG IRON

Chicago Fdy., No. 2	.....	\$18 50
Southern Fdy. No. 3	.....	23 25
Lake Superior Charcoal	.....	27 04
Malleable	.....	18 50

FIRST QUALITY BRIGHT TIN PLATES

1C	20x28 112 sheets	.....	\$25 10
IX	20x28 112 sheets	.....	29 60
IXX	20x28 56 sheets	.....	16 20
IXXX	20x28 56 sheets	.....	17 55
IXXXX	20x28 56 sheets	.....	18 95

TERNE PLATES

		Per Box
1C	20x28, 40-lb. 112 sheets	\$26 00
IX	20x28, 40-lb. 112 sheets	28 50
IX	20x28, 25-lb. 112 sheets	21 75
IX	20x28, 25-lb. 112 sheets	24 25
1C	20x28, 20-lb. 112 sheets	20 00
IV	20x28, 20-lb. 112 sheets	22 50
IC	20x28, 15-lb. 112 sheets	18 50

"ARMCO" INGOT IRON PLATES

No. 8 ga. up to and including 1/4 in.—100 lbs.	\$4 55
--	-------	--------

COKE PLATES

Cokes, 80 lbs., base, 20x28	.....	\$15 60
Cokes, 90 lbs., base, 20x28	.....	13 80
Cokes, 100 lbs., base, 20x28	.....	14 00
Cokes, 107 lbs., base, 1C	.....	14 30
20x28	.....	14 30
Cokes, 155 lbs., base, 1X	.....	16 40
Cokes, 155 lbs., base, 56 sheets	.....	9 20
Cokes, 175 lbs., base, 56 sheets	.....	10 05
Cokes, 195 lbs., base, 56 sheets	.....	10 90

BLUE ANNEALED SHEETS

Base 10 ga.....per 100 lbs.	\$3 50
"Armco" 10 ga.....per 100 lbs.	4 00

ONE PASS COLD ROLLED BLACK

No. 18-20.....per 100 lbs.	\$3 75
No. 22.....per 100 lbs.	3 90
No. 24.....per 100 lbs.	3 95
No. 26.....per 100 lbs.	4 05
No. 27.....per 100 lbs.	4 10
No. 28.....per 100 lbs.	4 20
No. 29.....per 100 lbs.	4 35
No. 30.....per 100 lbs.	4 45

"ARMCO" GALVANIZED

"Armco" 24.....per 100 lbs.	\$6 15
-----------------------------	--------

GALVANIZED

No. 16.....per 100 lbs.	\$4 30
No. 18.....per 100 lbs.	4 45
No. 20.....per 100 lbs.	4 60
No. 22.....per 100 lbs.	4 65
No. 24.....per 100 lbs.	4 80
No. 26.....per 100 lbs.	5 05
No. 27.....per 100 lbs.	5 15
No. 28.....per 100 lbs.	5 30
No. 30.....per 100 lbs.	5 70

BAR SOLDER

Warranted	
50-50.....per 100 lbs.	\$36 75
Commercial	
45-55.....per 100 lbs.	32 75
Plumbers.....per 100 lbs.	30 75

ZINC

In Slabs.....	\$ 8 50
---------------	---------

SHEET ZINC

Cash Lots (600 lbs.).....	\$12 00
Sheet Lots.....	13 00

BRASS

Sheets, Chicago base.....	17% c
Mill base.....	18% c
Tubing, brazed base.....	26% c
Wire, base.....	18% c
Rods, base.....	15% c

COPPER

Sheets, Chicago base.....	22c
Mill base.....	21c
Tubing, seamless base.....	25c
Wire, No. 9, B & S Ga.....	18% c
Wire, No. 10, B & S Ga.....	18% c
Wire, No. 11, B & S Ga.....	19c
Wire, No. 8, B & S Ga. and heavier.....	17% c

LEAD

American Pig.....	\$7 00
Bar.....	8 00

TIN

Pig Tin.....per 100 lbs.	\$67 00
Bar Tin.....per 100 lbs.	58 00

HARDWARE, SHEET METAL SUPPLIES, WARM AIR FURNACE FITTINGS AND ACCESSORIES.

ASBESTOS

Paper up to 1/16.....6c per lb.	
Roll board.....6 1/2 c per lb.	
Mill board 3/32 to 1/2.....6c per lb.	
Corrugated Paper (250 sq. ft. to roll).....	\$6 00 per roll

BRUSHES

Hot Air Pipe Cleaning Bristle, with handle, each	\$0 85
Flue Cleaning Steel only, each.....	1 25

BURRS

Copper Burrs only.....	40-5%
------------------------	-------

CEMENT, FURNACE

American Seal, 5-lb. cans, net	\$ 40
American Seal, 10-lb. cans, net	50
American Seal, 25-lb. cans, net	2 00
Pecora.....per 100 lbs.	7 51

CHIMNEY TOPS

Adams' Revolving	Wt. Doz.	Price Doz.
4 in.....	21 lbs.	\$11 00
6 in.....	24 lbs.	11 50
7 in.....	30 lbs.	13 50
8 in.....	33 lbs.	15 00
9 in.....	51 lbs.	16 50
10 in.....	56 lbs.	18 00
12 in.....	66 lbs.	22 00
14 in.....	110 lbs.	36 00

CLINKER TONGS

Front Rank, each.....	\$0 75
Per doz.....	8 40

CLIPS

Damper Adams No.-Rivet Steel, with tail pieces, per gross.....	\$2 00
Tail pieces, per gross.....	2 50

COPPERS—Soldering

Pointed Roofing	
3 lb. and heavier.....per lb.	40c
2 1/2 lb. ....per lb.	45c
2 lb. ....per lb.	43c
1 1/2 lb. ....per lb.	55c
1 lb. ....per lb.	60c

CORNICE BRACKES

Chicago Steel Bending Nos. 1 to 6B.....	Net
---	-----

CUT-OFFS

Gal., plain, round or cor. rd.	
26 gauge.....	30%
28 gauge.....	35%

DAMPERS

"Yankee" Hot Air	
7 inch, each 20c, doz.....	\$1 75
8 inch, each 25c, doz.....	2 40
9 inch, each 30c, doz.....	2 75
10 inch, each 32c, doz.....	3 00

Smoke Pipe	
7 inch, each.....	\$0 35
8 inch, each.....	40
9 inch, each.....	50
10 inch, each.....	60
12 inch, each.....	90

ADAMS No. 1 CHECK

Check and Collar Complete	
8 inch, each.....	2 00
9 inch, each.....	2 25

End Check Only	
8 inch, each.....	1 60
9 inch, each.....	1 85

Collar Only	
8 inch, each.....	50
9 inch, each.....	65

No. 2 CHECK

8 inch, each.....	1 00
9 inch, each.....	1 00

10% Disc. on Adams No. 1 and No. 2 Check	
--	--

Diamond Smoke Pipe	
7 inch, doz.....	\$ 2 00
8 inch, doz.....	3 20
9 inch, doz.....	4 80
10 inch, doz.....	6 00

Adams' Sheet Metal

7 inch, doz.....	\$ 1 60
8 inch, doz.....	2 20
9 inch, doz.....	2 60
10 inch, doz.....	2 80
12 inch, doz.....	3 50
14 inch, doz.....	5 00

DIGGERS

Post Hole	
Iwan's Split Handle (Eureka)	
4-ft. Handle.....per doz.	\$14 00
7-ft. Handle.....per doz.	36 00
Iwan's Hercules pattern, per doz.....	14 90

EAVES TROUGH

Galv. Crimpedge, crated 75 & 5% Zinc, "Barnes".....	60%
---	-----

ELBOWS

Conductor Pipe	
Galv. plain or corrugated, round flat Crimp.	
28 Gauge.....	60%
26 Gauge.....	45%
24 Gauge.....	15%

Galv. & Terne Steel	
Plain Rd. and Rd. Corr.:	
28 Ga.	60%
26 Ga.	45%
24 Ga.	15%

Square Corrugated	
No. 28 Gauge.....	50%
26 Gauge.....	35%

Portico Elbows	
Standard Gauge Conductor Pipe, plain or corrugated.	
Not nested.....	70 & 5%
Nested solid.....	70 & 5%

Sq. Corr., A. & B. & Octagon	
28 Ga.	50%
26 Ga.	35%

Partica	
1", 1 1/4", 1 1/2".....	45%

Copper	
16 oz., all designs.....	45%

Zinc—	
All styles.....	60%

ELBOWS—Stove Pipe

1-piece Corrugated, Uniform Blue "Milcor" No. 28 Gauge, Doz.	
5-inch.....	\$1 25
6-inch.....	1 35
7-inch.....	1 75

Special Corrugated

6-inch.....	\$1 00
7-inch.....	1 60

Adjustable—Uniform Blue

"Milcor" No. 28 Gauge, Uniform Blue, Doz.	
5-inch.....	\$1 75
6-inch.....	1 85
7-inch.....	2 15

WOOD FACES—50% off list.

FENCE	
726-6-12 1/2% (100 rods).....	\$28 63
1948-6-14 1/2% (100 rods).....	43 62

FILES AND RASPS

Heller's (American).....	50-10%
American.....	60-10%
Arcade.....	50%
Black Diamond.....	50%
Eagle.....	50%
Great Western.....	50%
Kearney & Foot.....	50%
McClellan.....	50%
Nicholson.....	50%
Simonds.....	60%

FIRE POTS

Clayton & Lambert's	
East of west boundary line of Province of Manitoba, Canada, No. Dakota, So. Dakota, Nebraska, Kansas, Oklahoma, Arizona, San Angelo and Laredo, Texas.....	52%
West of above boundary.....	48%

Geo. W. Diener Mfg. Co. Ea.

No. 02 Gasoline Torch, 1 qt.	.....	\$ 5 55
No. 0250, Kerosene, or Gasoline Torch, 1 qt.....		7 50
No. 10 Tinner's Furn. Square tank, 1 gal.....		12 60
No. 15 Tinner's Furn. Round tank, 1 gal.....		12 00
No. 21 Gas Soldering Furnace.....		3 60
No. 110 Automatic Gas Soldering Furnace.....		10 50

Double Blast Mfg. Co.	
Gasoline, Nos. 25 and 36.....	60%

Quick Meal Stove Co.	
Vesuvius, F. O. B. St. Louis	30%
(Extra Dist. for large quantities.)	

GALVANIZED WARE

Pails (Galv. after made), 10-qt.	\$2 13
Tubs (Galv. after made), No. 1.....	6 00
No. 2.....	6 35

GLASS

Single Strength, A, 25-in. brackets.....	87%
Single Strength, A, 34 to 40-in. bracket.....	86%
Single Strength, A, all other brackets.....	89%
Double Strength, A, all sizes.....	86%

HANGERS

Conductor Pipe Milcor Perfection Wire.....	25%
Eaves Trough	
Milcor Triplex Wire.....	10%
Milcor Steel (galv. after forming) List.....	plus 12 1/2%
Milcor Selflock E. T. Wire, List.....	plus 50%

HOOKS

Box V. & B. No. 1, each.....	\$0 26
------------------------------	--------

Conductor	
"Direct Drive" Wrought Iron for wood or brick.....	15%

Hay	
V. & B. No. 1, each.....	\$0 26

HUMIDIFIER

"Front-Range" Automatic	
In single lots.....	50%
In lots of 10 or more.....	50-5%
In lots of 25 or more.....	50-10%
Vapor pans, etc., each.....	50%

LIFTERS

Stove Cover	
Coppered.....per gro.	\$6 00
Alaska.....per gro.	4 75

MALLETS

Tinners Hickory.....per doz.	\$2 25
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MITRES

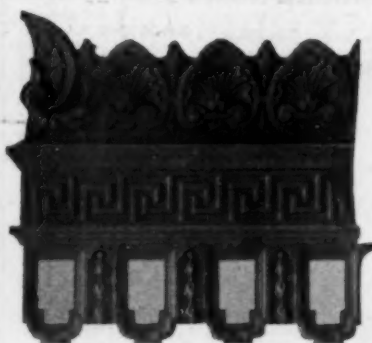
Galvanized steel mitres.	
28 Ga.	70
26 Ga.	60-20

NAILS

Cut Steel.....	\$4 35
Cut Iron.....	4 35

Wire	
Common.....	2 95
Cement Coated.....	2 95

(Continued on Page 222)



ARCHITECTURAL SHEET METAL ORNAMENTS

Made of
ZINC
COPPER
BRONZE
OR
LEAD
Also
METAL CEILINGS

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oxydized terne plate. The lat-
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Any Length or Width
Flat Bars 3/16x2"
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F. O. B. Chicago

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hold-down. Blades of highest grade cru-
cible steel. Most indispensable high grade shears made. Equal to
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IS MORE
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DOES NOT
CORRODE TOOLS

IS
GUARANTEED

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CONVENIENT

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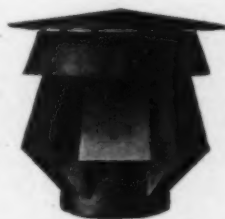
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are. Here is a sales oppor-
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the average Sheet Metal
Worker, but one which offers
a lucrative business to those
who take advantage of it.

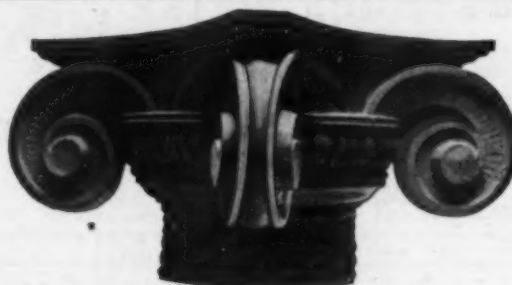
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AND STATUARY**
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NETTING, POULTRY		ROOFING	
Galvanized before weav-	—	Best grade, slate surf. pre-	Per Square
ing	57½-5%	pared	\$ 2 30
Galvanized after weaving.	52½-5%	Best talc surfaced	2 65
		Medium talc surfaced.....	2 00
		Light talc surfaced.....	1 20
		Red Rosin Sheeting, per ton	57 00
PASTE		SCREWS	
Asbestos Dry Paste:		Sheet Metal	
200-lb. barrel	\$16 00	7, ½x½, per gross.....	\$0 52
100-lb. barrel	8 75	No. 10, ¾x3/16, per gross.	68
25-lb. pail	3 50	No. 14, ¾x½, per gross..	89
10-lb. bag	1 10		
5-lb. bag	60		
2½-lb. cartons	35		
PIPE		SHEARS, TINNERS' & MACHINISTS'	
Conductor		Viking	\$22 00
Cor. Rd., Plain Rd., or Sq.		Lennox Throatless	
Galvanized		No. 15	35%
Crated and nested (all	75-2¼%	Shear blades	10%
gauges)		(f. o. b. Marshalltown, Iowa)	
Crated and not nested	70-15%		
(all gauges)		SHIELDS, REGISTER	
Furnace Pipe		No. 1 "Gem" floor.....	\$12 00 doz.
Double Wall Pipe and		No. 2 "Gem" wall.....	6 00 doz.
Fittings	40-10%		
Single Wall Pipe, Round		SHOES	
Galvanized Pipe	40-10%	Galv. 23 Gauge, Plain or cor-	
Galvanized and Tin Fit-		rugated round flat crimp....	60%
tings	40-10%	26 gauge round flat crimp....	45%
Lead		24 gauge round flat crimp....	1½%
Per 100 lbs.....	\$13 50		
Stove Pipe		SNIPS, TINNERS'	
"Milcor" "Titelock" Uniform Blue		Clover Leaf	40 & 10%
Stove		National	40 & 10%
23 gauge, 5 inch U. C.	11 50	Star	50%
23 gauge, 6 inch U. C.	13 25	Milcor	Net
23 gauge, 7 inch U. C.	14 25		
30 gauge, 5 inch U. C.	10 50	SQUARES	
30 gauge, 6 inch U. C.	11 25	Steel and Iron	Net
30 gauge, 7 inch U. C.	13 25	(Add for bluing, \$3 per doz. net.)	
T-Joint Made up		Mitre	Net
6-inch, 23 ga....per doz.	\$ 5 00	Try	Net
		Try and Bevel.....	Net
All Zinc		Try and Mitre	Net
No. 11, all styles.....	60%	Fox's	per doz. \$6 00
		Winterbottom's	10%
POKERS, STOVE		STOPPERS, FLUE	
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		100 lbs.	3 90
Ventilating Register		Wire Cloth—black painted,	
Per gross	9 00	12-mesh, per 100 sq. ft....	1 65
Small, per pair.....	20	Cattle Wire—galvaniz'd catch	
Large, per pair.....	50	weight spool, per 100 lbs..	3 65
		Galvanized Hog Wire, 30 rod	
		spool, per spool.....	2 13
		Galvanized Plain Wire, No.	
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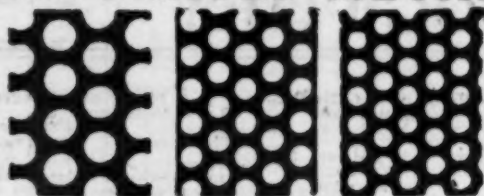
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Taylor Co., N. & G.,
Philadelphia, Pa.

Tools—TinSmith's.
Bertsch & Co.,
Cambridge City, Ind.
Burton Co., The W. J.,
Detroit, Mich.
Chicago Elbow Machine Co.,
Oak Park, Ill.
Double-Duty Mfg. Co.,
Aurora, Ill.
Dries & Krump Mfg. Co.,
Chicago, Ill.
Hyro Mfg. Co., New York, N. Y.
Marshalltown Mfg. Co.,
Marshalltown, Iowa
Osborn Co., The J. M. & L. A.,
Cleveland, Ohio
Peck, Stow & Wilcox Co.,
Southington, Conn.
Ryerson & Son, Inc.,
Chicago, Ill.
Viking Shear Co.,
Erie, Pa.
Whitney Mfg. Co., W. A.,
Rockford, Ill.
Whitney Metal Tool Co.,
Rockford, Ill.

Torches.
Burgess Soldering Furnace Co.,
Columbus, Ohio
Clayton & Lambert Mfg. Co.,
Detroit, Mich.
Diener Mfg. Co., G. W.,
Chicago, Ill.
Quick Meal Stove Co.,
St. Louis, Mo.
Ryerson & Son, Inc.,
Chicago, Ill.

Trade Extension.
Copper & Brass Research Association,
New York, N. Y.
Sheet Steel Trade Extension Committee,
Pittsburgh, Pa.

Trimmings—Stove.
Fanner Mfg. Co., Cleveland, Ohio

Ventilators.
Aeolus Dickinson Co.,
Chicago, Ill.
Akrot Ventilators, Inc.,
Chicago, Ill.
Arex Company,
Chicago, Ill.
Berger Bros. Co.,
Philadelphia, Pa.
Friedley-Voshardt Co.,
Chicago, Ill.
Kernchen Co.,
Chicago, Ill.
Lupton's Sons Co., David,
Philadelphia, Pa.
Milwaukee Corrugating Co.,
Mil., Ch'go, La Crosse, Kan. City
Standard Ventilator Co.,
Lewisburg, Pa.
Sturtevant Co.,
Boston, Mass.

Ventilators—Ceiling.
Eaglesfield Ventilator Co.,
Indianapolis, Ind.
Hart & Cooley Co.,
New Britain, Conn.
Henry Furnace & Fdy. Co.,
Cleveland, Ohio
Tuttle & Bailey Mfg. Co.,
New York
Sturtevant Co., B. F., Boston, Mass.

Windows—Steel.
Lupton's Sons Co., David,
Philadelphia, Pa.

Wire—Electrical.
American Steel & Wire Co.,
Chicago, Ill.

Wire Hoops.
American Steel & Wire Co.,
Chicago, Ill.

Wire Rope.
American Steel & Wire Co.,
Chicago, Ill.

Wire.
Merchant & Evans Co.,
Philadelphia, Pa.
New Jersey Zinc Co., The,
New York, N. Y.

WANTS AND SALES

Any yearly subscriber to AMERICAN ARTISAN may insert advertisements of not more than fifty words in our Want and Sales Columns WITHOUT CHARGE.

Such advertisements, however, must be limited to help or situation wanted, tools or equipment for sale, to exchange or to buy, business for sale or location desired.

When sending advertisement state whether your name or blind number is to be used.

BUSINESS CHANCES

For Sale—One-half interest in a tin and plumbing shop. \$500.00 needed. Only shop in town of 1500. Must be a tinner. Reason for selling, old age. Address R. Dykstra, Evart, Mich. F-458

Lightning Rods—Dealers who are selling Lightning Protection will make money by writing us for our latest Factory to Dealer Prices. We employ no salesmen and save you all overhead charges. Our Pure Copper Cable and Fittings are endorsed by the National Board of Fire Underwriters and hundreds of dealers. Write today for samples and prices. L. K. Diddle Company, Marshfield, Wis.

SITUATION WANTED

Situation Wanted—I have sold my shop and want to connect with some live company in a first-class shop doing heating, warm air, steam and hot water. I am a first-class heating man and nothing but a steady year-around job will do. Minnesota town of 4,000 or more preferred. State salary and commission. Address L-457, AMERICAN ARTISAN, 620 S. Michigan Ave., Chicago, Ill.

Would like to get in touch with a manufacturer of furnaces and stoves to handle their line in Gary, Ind., as a factory representative in Lake County. Large acquaintance and experienced. Want to sell from factory to customer. This must be a good furnace and a good name. Address B-458, AMERICAN ARTISAN, 620 S. Michigan, Chicago, Ill.

Situation Wanted—A high grade experienced furnace salesman will consider a change for the coming year. Capable of planning and estimating heating systems according to the "Standard Code"—also fan work. Address C-458, AMERICAN ARTISAN, 620 S. Michigan Ave., Chicago, Ill.

Situation Wanted: A high grade sales manager for a leading furnace manufacturer will consider making a change. Fully experienced in all branches of Warm Air Heating and handling of salesmen. Write me in confidence. D-458, AMERICAN ARTISAN, 620 S. Michigan Avenue, Chicago, Ill.

First-class tinner and furnace man, also pattern cutter, desires steady employment with reliable firm. 18 years' experience. Married. Available at once and A1 references. Please state wages and full particulars. Address J. D. Grace, Elmer, Mo. M457

MISCELLANEOUS

Anyone knowing the whereabouts of Jim Lee Modrell, plumber, kindly notify O. Fisher, 104 Wood Ave., Salida, Colorado. O457

HELP WANTED

Wanted—A first-class gutter, roofing and furnace man; open shop; reasonably steady work if you can come at once. Apply to Stutz Brothers, 1701 McCallie Ave., Chattanooga, Tenn. Z457

Wanted—First-class sheet metal worker and furnace man. Address Andrew Lind, Dundee, Ill. Y457

Wanted at once—Furnace salesman with Standard Code Experience. Must be a willing worker and ready to start at once. Steady position for the right man. Address G-458, AMERICAN ARTISAN, 620 S. Michigan Avenue, Chicago.

Wanted—First-class sheet metal worker. Good layout man on all kinds of ventilating, blowpiping, boiler breechings, cornices, skylights, etc. Good steady job for the right man. Address S-457, AMERICAN ARTISAN, 620 S. Michigan, Chicago.

TINNERS' TOOLS

Wanted to Buy — Good used cornice brake. Must be reasonable. Address W. S. Sturdivant, 1511 S. Osage Ave., Sedalia, Mo. T457

For Sale or Trade—1 set 36-inch forming rolls, 1 30-inch Wright's folder, 1 20-inch mandrel stake. I want wiring machine, burring machine and hatchet stake. Address Mephram Sheet Metal Works, 1601 Ventura Ave., Ventura, Calif. X457

For Sale—The following tools are all in good condition and prices are as follows: 1 30" square shear, \$40.00; 1 20" roll, \$9.50; 1 30" stove pipe folder, \$15.00; 1 circle shear, rebuilt, \$4.00; 1 30" roll, \$10.50; 1 30" bar folder, \$32.50; 1 No. 2 36" groover with end lock, \$37.50; 1 setting down machine, \$14.00; 1 thick edge turner, \$13.50; 1 wiring machine, \$11.50; 1 thin edge turner, \$9.50; 1 pipe crimper, \$9.00; 1 pipe swedger, \$10.00. All the above with stands. 1 beak horn stake, \$10.50; 1 square head, \$3.25; 1 hatchet stake, \$3.50; 1 candle molder, \$1.00; 1 slate ripper, hammer and stake, \$3.00. Will sell the above separately as marked or the whole lot for \$200.00. We also have 1 set 50"x33" rolls geared, with crank on both ends or for belt power on iron stand, good as new and will sell very reasonable. Address E-458, AMERICAN ARTISAN, 620 S. Michigan Avenue, Chicago, Illinois.

BOOKS

The Ventilation Handbook, by Charles L. Hubbard. A practical book designed to cover the principles and practice of ventilation as applied to furnace heating, ducts, flues and dampers for gravity heating; fans and fan works for ventilation and hot blast heating by means of a comprehensive series of questions, answers and very plain descriptions easy to understand. Price \$2.00. Order from Book Dept., AMERICAN ARTISAN, 620 South Michigan Avenue, Chicago, Illinois.

Sheet Metal Duct Construction, by Neubecker—A treatise on the construction and erection of heating and ventilating ducts, including the cutting and forming of the metal, the laying out of the elbows, etc. A practical expert wrote this book and you'll find that it covers the subject thoroughly. By William Neubecker. Bound in cloth, 194 pages, 217 illustrations. Size 5½x8¼ inches. Price \$2.00. Order from Book Dept., AMERICAN ARTISAN, 620 South Michigan Avenue, Chicago, Illinois.

BOOKS

Manual of Automotive Radiator Construction and Repair, by F. L. Curfman and T. H. Leet—Anyone interested in Radiator Repairing will find the 185 pages of practical instructions and the 120 illustrations showing actual construction and repairing a big help. In a condensed manner some four to five thousand answers to questions are given. It is thoroughly practical as both authors are men of wide experience in this work. Printed in large, easy to read type. Measures 5½x9 inches. Price \$2.50. Order from Book Dept., AMERICAN ARTISAN, 620 South Michigan Avenue, Chicago, Illinois.

Kinks and Labor Saving Methods for Sheet Metal Workers, Vols. 1 and 2—Volume I. There are hundreds of ideas and expedients, all contributed by sheet metal workers throughout the country, illustrated by cuts and original drawings. Cloth bound. Size 4½x7 inches. Price \$1.00. Volume II written in same popular style as Volume I. Places at your disposal a comprehensive collection of ingenious ways of executing many practical tasks in much more simple way than if done in the regulation manner. Also contains special articles on Automobile Repairing; gives a very practical series of illustrated directions on erecting metal ceilings with ten guide rules which will save time, trouble and expensive mistakes. Price \$1.00. Order from Book Dept., AMERICAN ARTISAN, 620 South Michigan Avenue Chicago, Illinois.

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WANTED SALESMAN

Experienced in planning, figuring and selling furnaces, registers, fittings, parlor heaters and heating supplies. Territory southern Wisconsin, for Milwaukee House. Address K458, American Artisan, 620 So. Michigan, Chicago, Ill.

SPLENDID OPPORTUNITY

for a salesman experienced in selling Asbestos Furnace Cement, to act as general representative for Linseal Asbestos Furnace Cement. Only experienced man with good sales record and reference apply. Address, The Buckeye Products Company, 7020 Carthage Ave., Cincinnati, O., H458.

SPECIAL NOTICES

WANTED

Experienced furnace salesmen in sundry territories by an old established, well known manufacturer of high class trade mark line of furnaces. Address, American Artisan, 620 S. Michigan Ave., Chicago, J458.

NEW ELECTRIC HEATER

Circulating type. I have designed and built a patent office model of a circulating electric heater for home use—that is radically new in principle—and unusual in design and efficiency. Can be retailed at a good profit for less than \$10.00. I need a partner with ideas—to help me develop this heater and place it on the market. A small fortune in it if properly exploited. Address L458, American Artisan, 620 So. Michigan Ave., Chicago.

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The addition to our extensive line of heating equipment, of gas-fired furnaces and boilers, creates an opening in our sales force for one or two good salesmen, with traveling experience, and preferably some knowledge of the heating business. We invite salesmen seeking a more complete line to sell, to write us in strict confidence, with a view to arranging a personal interview. Address

L. J. MUELLER FURNACE CO.
MILWAUKEE, WISCONSIN

M469

SALES MANAGER WANTED

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The man who can satisfy us may acquire an interest in the business but this is not necessary as what we want is a high type of business producer; a man who can prove to us that he has been a star salesman in the past and is an entirely dependable kind of a business man.

Address Sales Manager, P457, American Artisan, 620 S. Michigan, Chicago.



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SPECIAL NOTICES

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If you are looking for a real opportunity, a place where hard work and honesty will repay you in direct proportion to your efforts, and a permanent situation, write for complete details to R457, American Artisan, 620 South Michigan Boulevard, Chicago.



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of
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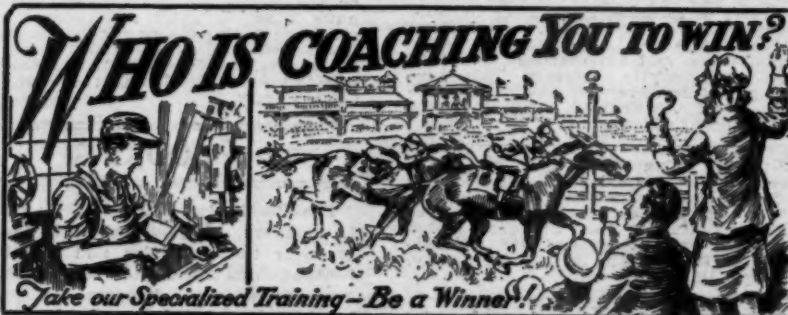
He can help you in that sales drive that you are putting on—he gets results—he knows the game—he knows the trade and he is well known and respected by thousands of live, high class warm air heater installers throughout the country and especially in the middle west and west.

He has called on the trade and sold warm air heaters for many years—yet he's an up-to-date salesman who works every week of the year—rain or shine.

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AMERICAN ARTISAN

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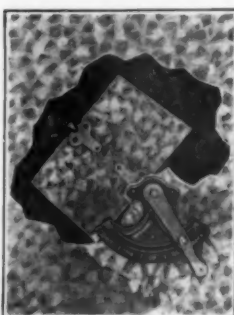
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